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CONTENTS



71 The ultimate shoot-em-up? Game Show looks at Xenon 2



29 The professional impression of DTP on Acorn machines

REGULARS

7 News

16 The Acorn User Disc

21 Graphics

22 Comms

24 Public Domain

27 Education

55 Letters

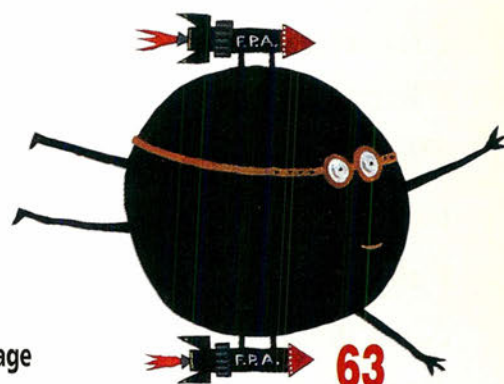
86 The subscriber's page

113 Free ads

120 Learning curve

124 Next month

128 The Moxon interview
Computer Concepts' Gordon Taylor



HANDS ON

81 Back to basics
Learn how to program

89 Questions and answers

95 Not so baby Bio
Wrapping up our handy Bio module

99 A new dimension

101 *INFO



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REVIEWS

51 Different strokes

Keystroke promises to take the effort out of using the desktop

56 Face to face

Altered images with the first commercial morphing package

59 Power to the people

Datpower is more than just your average, everyday database

63 Float on

So what can the FPA10 chip do for you?

71 Game Show

Xenon, Play it again Sam, Dungeon and much more

111 Child's play

Pete Worrall has fun with Kidpix

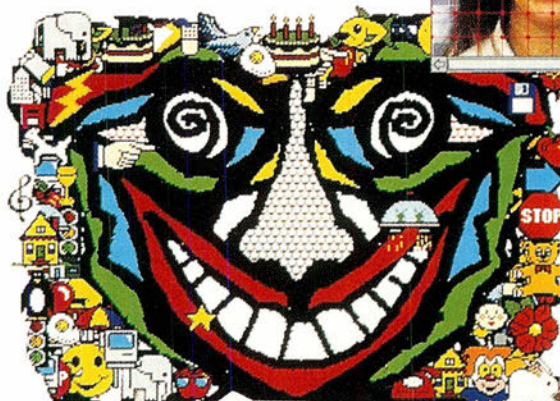
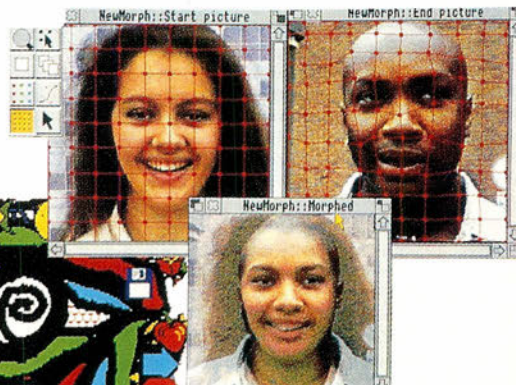
119 Meeting a need

A look at educational special needs software

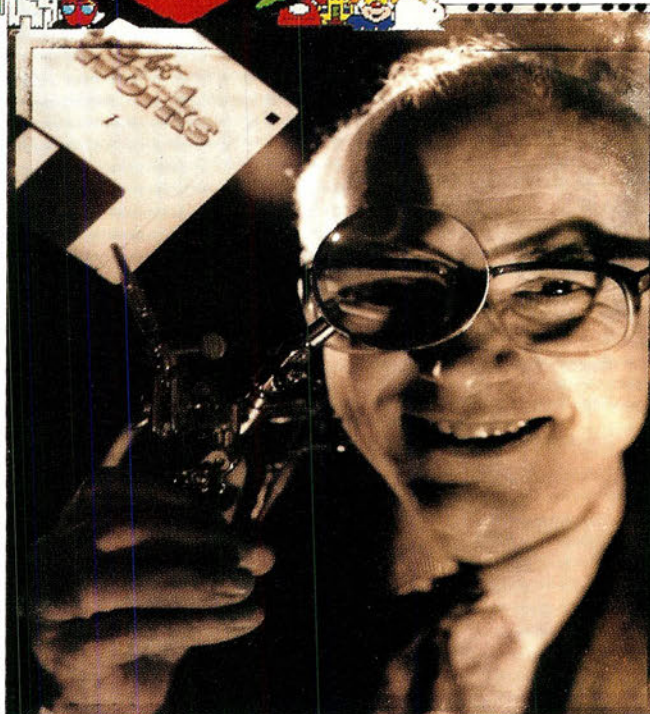
123 Survival of the quickest

Jack Kreindler surveys the Arc debut of graphics package QPaint

56 Odd transformations with Morpheus



111 Kidpix: fun for all the family



128 'The Acorn is the only credible non-American platform,' says CC's Gordon Taylor. Find out more in the Moxon Interview

FEATURES

29 Get a good press

See how the Acorn stacks up against the Mac and the PC for DTP

35 Let's get physical

Jack Kreindler watches DTP on the Acorn put into practice

47 Acorn World

65 Smooth as silk

We apply a CAD solution to a classroom brief

69 Competition

Editor's letter

As the only newstand magazine to be produced using *Impression*, *Acorn User* is one of Acorn's success stories. So why are we the only ones? This month we look at some of the options in the publishing world, and describe how the Acorn machine shapes up to the opposition from Macs and PCs. With the release of a brand new version of *Impression*, you could be in for a few surprises. Plus a cover disc for you to enjoy...

Karen Dnaphay

EXCLUSIVELY PRODUCED ON ACORN MACHINES

All the editorial pages in *BBC Acorn User* are produced using Acorn computers, Computer Concepts' *Impression 2*, LaserDirect printers and Taxan monitors



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Numerator Longman £39
Numerator Chaos Longman £18

Oak Logic Oak £79
Oak PCB Oak £79
Oh No! More Lemmings (requires Lemmings) Krisalis £15

Ollie Octopus' Sketchpad
age 4+ Storm £12
Omar Sharif's Bridge Krisalis £22
Orion Minerva £8
Orrey Spacetech £93
Ovation RISC £84
Overload Clares £13

Padlock ICS £10
- site licence £30
Pandora's Box Fourth Dim £17
Papp Computer Tutorial £17
Paradroid 2000 Coin-Age £20
Payroll Manager Silicon £79
PC Emulator 1.8 Acorn £95
PDT Oak £149
Pendown Longman £46
Pendown Etoiles Longman £49
Pendown Outline Fonts Longman £19
Pendown Plus Longman £68
Personal Accounts Apricote £29
Perspectives TechSoft £54
Pesky Muskrats Coin-Age £19
Phonic Games Fisher-Marriott £28
Photopia CIS £38
Picture Book Triple R £15
Picture It! Apian £29
- Topic discs each £9
PinPoint Longman £65
- site licence £390
PipeDream 3 Colton £72
PipeDream 4 Colton £119
PipeDriver Dot 1 ICS £10
Pipe Mania Empire £18
Pirate, age 8-14 Chalksoft £19
Placard ICS £10
- site licence £30
Plague Planet Alpine £13
PlayBack RISC £19
Play It Again Sam 1 Superior £20
Plot Clares £POA
Podd, KS1.2 ESM £27
Podd - Welsh, KS1.2 ESM £38
Polyominoes Topologika £22
Populous Krisalis £29
Poster 4maton £75
PowerROUTER Silicon £159
Prehistoric Animals, sprites Micro Studio £16
Premier Circle £71
- DataBase Circle £25
- WordProc Circle £25
Presenter GTi Lingenuity £66
PrimeArt, KS1-4 Minerva £69
PrimeMover, KS2-4 Minerva £75
PrimeSolver, KS1-4 Minerva £POA
PrimeWord, KS2-4 Minerva £55

Printer Drivers, RISC OS:
Canon BubbleJet, Canon LBP, Canon PJ1080, ColourGel, Epson JX, Epson ESC-P2, HP, Integrex 132 - each Ace £19
Deskjet 500C, Epson / Star colour - each RISC £15
ProDrivers: Canon LBP8, Epson ESC-P2, HP Colourjet - each Ace £37
TurboDrivers: Canon, Epson Stylus 800, HP - each CC £42
ProArtisan 2 Clares £109
ProCAD, KS4 Minerva £394
Programming in ANSI Standard C on the Archimedes Sigma vo £15
Prophet (requires 2 Mb) Apricote £153
Prophet Entry Level Apricote £10
ProSHEET Silicon £37
Protext Amor £117
Provocator Computer Tutorial £15
Puncman 1 and 2 Chalksoft £16
Puncman 3 and 4 Chalksoft £16
Puncman 5 to 7 Chalksoft £18

Punctuate £31
Punctuate! Topologika £25
QDBug £58
Quest for Gold Krisalis £19
QuickKey ICS £10
- site licence £30
Real McCoy 2 Fourth Dim £23
Real McCoy 3 Fourth Dim £23
Real McCoy 4 Fourth Dim £27
Recall, age 8-13 Sherston £37
Redshift Minerva £10
RemoteFS Atornwide £48
Render Bender 2 Clares £78
Repton 3 Superior £20
Resultz Colton £POA
Revelation 1 Longman £39
Revelation 2 Longman £75
Revelation 2 CD Rom Longman £98
Revelation ImagePro Longman £127
Reversals Chalksoft £17
Rhapsody 2 Clares £45
Rhapsody 3 Clares £79
Rhythm-Bed Clares £39
RhythmBox II, age 8+ EMR £34
RiscBASIC Compiler Silicon £79
RiscForth Compiler Silicon £79
Risc OS 3 First Steps Dabs vo £POA
Risc OS 3 Programmer's Reference Manual Acorn vo £99
Risc OS Companion Vol 1 Oak vo £49
Risc OS Extras 1992 Acorn £9
Risc OS Style Guide Acorn vo £12
RoboLogo Silicon £39
Round the World Yacht Race, age 9+ Storm £27

Saloon Cars Deluxe Fourth Dim £25
- Deluxe Extra Courses Fourth Dim £16
S-Base Developer Longman £140
S-Base Developer Plus Longman £275
S-Base Network Longman £275
S-Base Personal Longman £75
Schema Clares £95
Schema 2 Clares £POA
Science, drawfiles Micro Studio £25
Score Draw Clares £44
Scorewriter PMS Desktop, age 12+ EMR £147
ScreenPlay Widgit £35
ScreenTurtle version 2 Topologika £54
Search and Rescue, age 9+ Storm £27
Seashore Guide, drawfiles Micro Studio £16
Seelinks - Ourselves, KS1.2 ESM £27
Seelinks - Pond Watch, KS2 ESM £35
Seelinks - Tourism, KS3 ESM £35
Seelinks - Transport, KS2 ESM £35
Serenade Clares £106
Serpents CIS £16
Settlement, KS3 ESM £31
ShapeFX Data Store £10
ShareHolder Silicon £106
ShareHolder Professional Silicon £164
ShowPage CC £145
Shylock Gnomes, age 10-15 Selective £16
Sim City Krisalis £22
SkyHunter Longman £22
Sleuth RISC £POA
smArt 4maton £50
smArt Aliens, Animals, Dinosaurs, Egypt, Europe*, Faces*, Fantasy, Fashion, Fiddles & Drums, Heraldry, Homes*, Leisure*, Look Smart, Smartoons, Trees and Gardens

*Please specify English, French, German, Spanish or Welsh - each 4maton £15
smArtFiler 4maton £32
smArt Modern Languages 4maton £19
Smudge the Spaniel, age 4-8 Storm £20
Snippet (new version) 4maton £32
Soapbox Xavier £34
SolidCAD Silicon £79
SolidsRender Silicon £79
SolidTools Silicon £234
- education price £194
SongBook, age 3-10 EMR £24
Sound Engineer, age 12+ EMR £59
Sound FX Maker CIS £40
Sounds & Rhymes Xavier £29
Spark David Pilling £5
SparkFS David Pilling £20
Sparkle Morley £59
Special ICS £10
- site licence £30
Speech! Superior £17
Spelling week-by-week Chalksoft £21
Spex ExpLAN £98
Spheres of Chaos Matt Black £19
Splash, age 7-11 Sherston £19
Splice Ace £34
Split an Image, age 7-16 Sherston £16
Spoken Word Wyddfa £16
Spooler Computer Tutorial £9
Sporting Triangles CDS £19

SportsDay £22
SportsPeople Selective £22
SpriteEd Computer Tutorial £17
SpySnatcher Topologika £12
Square Route Computer Eyes £16
Squirrel Digital Services £120
Starspell Plus Fisher-Marriott £19
StartWrite Icon £55
StockPack Topologika £37
StoryBook, age 3-10 EMR £59
StrongED Stallion £22
Studio24Plus Version 2, age 11+ EMR £149
Studio24Plus Version 3, age 12+ EMR £210
Stunt Racer Fourth £25
SUMthing Resource £19
SuperDump Silicon £20
Superior Golf Superior £14
SuperPlot Silicon £20
Supersounds CIS £15
Supersounds 2 CIS £15
Swiv Krisalis £19

TABS ExpLAN £95
Talisman Minerva £8
Talking Pendown Longman £58
Talking Pictures Wyddfa £16
Target Maths Triple R £15
Technodream (Nevryon 2) Superior £20
TechWriter Icon £159
Thinklink Xavier £29
ThinkSheet Fisher-Marriott £38
Thundermonk Minerva £11
Tiles Brain Games £16
Timeshare Fisher-Marriott £19
Timetable Minerva £549
Time Traveller, KS2 ESM £37
- Britain Since the 1930s, KS2 £30
- Expansion, Trade and Industry, KS3 £36
- Making of the United Kingdom, KS3 £39
- Medieval Realms, KS3 £36
- The Victorians, KS2 £30

TinyDraw/TinyPuzzle Topologika £34
TinyPuzzle Topologika £24
Tiler Clares £119
Toolkit Plus Clares £36
Tools Graphics, drawfiles Micro Studio £23
Topographer Clares £63
Touch Type Iota £39
Tower of Babel Cygnus £17
Trace David Pilling £5
Tracer Midnight £46
Tracker Leading Edge £37
Transport, drawfiles Micro Studio £25
Turbo Type CIS £20
Tween Ace £35
Twin Acorn £24
Twin World UBI Soft £14
TWO (Task and Window Organiser) ICS £10
- site licence £30
TypeStudio RISC £39

Utility Disc 1 Data Store £8
Utility Disc 2 Data Store £13
Utility Disc 3 Data Store £7
Utility Collection Data Store £21
Vector 4maton £75
View»Mac 3 Human £65
- Arc/Mac Cable Human £24
Viewpoints, age 7-11 Sherston £37
Virtual Golf Fourth Dim £25
Visual Backup Dabhand £39
Vox Box Clares £46

Waiter Digital Services £35
Waterloo (not OS 3.1) Turcan £19
Whale Facts Topologika £34
Wordbank Topologika £25
Words and Pictures Chalksoft £18
WordWorks CC £38
Wordz Colton £88
World Geography Maps, drawMicro Studio £23
WorldMaker, KS3.4 ESM £57
World Map Study, KS3.4 ESM £67
Worldscape Leading Edge £17
World Wildlife, sprites Micro Studio £16
Worra Battle Oak £15
WorraCAD Oak £79

Yacht 2 Computer Tutorial £49
Yacht 7 Computer Tutorial £94
Zarch Superior £14
Zelanites (not OS 3) Micro Power £15
Zool Gremlin £20



I²C PRODUCTS ...

AnDi Oddule Baildon £39
I²C Adaptor (needed unless you already have an I²C socket) Baildon £10
I²C SWI (enhanced IIC_Control) Baildon £15
- bought with Oddule £5

SCANNERS, DIGITISERS ...

ArcScanner including Epson GT-4000 Clares £1660
Colour Converter Linds £145
FaxScan Spacetech £94
GreyHawk Wild Vision £98
Handipad TechSoft £193
Hawk V9 MkII Wild Vision £199
- standard £259
- hardware dithered
HiVision Digitiser Colour HCCS £137
- A3000 External £124
- A3000 Series / A4000 Internal £124
iImage (Sharp JX-100) Irlam £490
- for A5000 £589
- for other computers £383
Image Scanner Iota £239
- Colour Upgrade Kit Iota £98
- Fast Parallel Card Iota £539
i-Scan 200 Irlam £589
i-Scan 400 Irlam £589
Pineapple Colour Video Digitiser Pineapple £195
- A3000 boxed Pineapple £230
Prolmage (Epson GT6000) Irlam £989
- for A5000 £1089
- for other computers £277
Scan-Light A4 CC £360
- with Sheet Feeder CC £190
Scan-Light 256 CC £190
- A3000 internal CC £565
Scan-Light Professional CC £699
- as above + SCSI interface CC £215
Scan-Light Video CC £195
Snapshot Colour Video Digitiser Lingenuity £275
- A3000 version Lingenuity £545
Spectra RISC £555
- A3000 Series / A4000 Internal £545
- A3000 External £48
- Archimedes / A5000 £76
Vision Digitiser HCCS £143
- A5000 / 300 / 400 Mono £76
- A5000 / 300 / 400 Colour £60
- A3000 External Mono £89
- A3000 Series / A4000 Internal Mono £48
- A3000 Series / A4000 Internal Colour £76

MEMORY ...

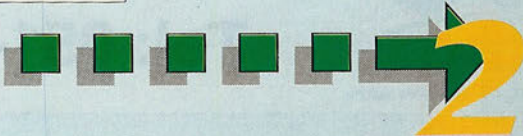
Fitting extra unless otherwise stated
† Fitting fairly easy ‡ Fitting needs expertise
A3000 2 Mb Upgradable † Atomwide/IFEL £43
A3000 4 Mb † Atomwide/IFEL £100
A3010 1-2 Mb £39
A3020 / A4000 2-4 Mb † IFEL £55
A310 2 Mb Upgradable soldered † IFEL £88
- as above + MEMC1a † £113
- as above + MEMC1a + fitting † £143
A310 4 Mb soldered + MEMC1a † IFEL £152
- as above + fitting † £182
A5000 2-4 Mb † Atomwide £85
A5000 2-8 Mb including fitting Atomwide £500
A5000 4-8 Mb including fitting Atomwide £391
A540 4 Mb † Acorn £238

PRINTERS ...

ArcLaser 300-6 Calligraph £895
ArcServer 300-8 Calligraph £985
Bubble Jet BJ-10sx Canon £187
Bubble Jet BJ-10sx + TurboDriver Canon/CC £219
Bubble Jet BJ-200 Canon £282
Bubble Jet BJ-230 Canon £315
Bubble Jet BJ-300 Canon £325
Bubble Jet BJ-330 Canon £380

HARDWARE

For ordering details please turn to page 3



ICS

051-625 1006

Bubble Jet BJC-800 + TurboDriver

Canon/CC £1374

DeskJet 510 Hewlett-Packard £275

DeskJet 500C Hewlett-Packard £375

DeskJet 550C Hewlett-Packard £525

Laser Direct HiRes4 CC £899

- 250-sheet Paper Cassette £99

Laser Direct HiRes8 CC £1275

Laser Direct HiRes Board CC £325

Refill toner cartridge for Canon EPS £50

New toner cartridge for Canon LBP-4 £59

COMPUTERS...

A3010 1MB FD Family Solution Acorn £420

A3010 2MB FD Learning Curve with Monitor Acorn £675

- as above + JP150 Printer Acorn £889

A3020 2MB FD Acorn £749

A3020 2MB HD60 Acorn £899

A4 2MB FD Acorn £1395

A4 4MB HD60 Acorn £1695

A4 4MB HD120 Acorn £1799

A4 Extra Battery Pack Acorn £50

A4 Shoulder Bag Acorn £35

A4000 2MB HD80 Acorn £945

- as above + Home Office £995

A5000 2MB HD80 Multiscan Acorn £1395

- as above + Learning Curve £1455

Pocket Book Acorn **£169**

MISCELLANEOUS...

386 PC Expansion Card 25 MHz Aleph One

- 1 Mb £POA

- 4 Mb £POA

486 PC Expansion Card Aleph One

- 1 Mb £POA

- 4 Mb £POA

4-slot 4-layer Backplane IFEL £52

A300/400 Fan kit ICS £15

A3000 Expansion Box Wild Vision £135

A310 RISC OS Carrier Board ‡ IFEL £18

A5000 Fitting Kit for second hard disc ICS £15

Arkey Function KeyStrip Holder ICS V0 £10

- pack of 4 V0 £10

ArNET ACS £69

ARM3 ‡ Aleph One/IFEL £165

Arm_Stick Arm_Tech £28

ColourBurst State £374

ColourCard CC £225

- A3000 External CC £225

Dongle Dangle with screw fittings ICS £6

Fan filters (pack of 10) (not A5000) ICS £6

FaxPack CC £289

Floating Point Accelerator (for A5000 + A540) Acorn £91

Floppy Discs, 10 x 3 1/2" High Density £10

G16 True Colour Card State £258

G8 Plus Accelerator State £238

HiPoint Mouse for A4 Genius £49

Microlin fx Pocket Fax Modem Pace £179

Micro Mouse Clares £26

Monitor Stand for A3000 ICS £21

Mono/SCSI Atomwide £48

Podule Case for A3000 HCCS £16

Printer Port Sampler Leading Edge £42

Printer/SCSI Atomwide £74

Publishing Pack CC £475

RISC OS 3 Upgrade Acorn £42

- Bulk package Acorn £335

- A5000 Acorn £20

Seal 'n Type spill-proof Keyboard Covers

- Archimedes / A5000 Kador £14

- A3000 Kador £14

TouchWindow Linds £234

Whisper Fan Quietener (for A300/A400 series only) ICS £15

Wizzo IDE Filing System on rom ICS

- Wizzo4 for A4 £POA

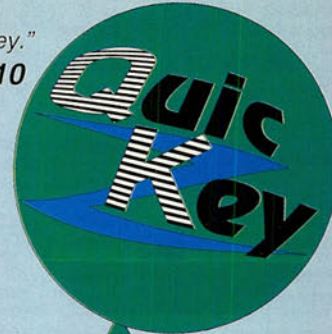
- **Wizzo5** for A5000 **£29**

"You wonder how you ever managed without QuickKey."

NOW ONLY £10

"Congratulations on ColourSep! The results, compared with the drivers currently available, are bordering on the fantastic."

NOW ONLY £15



"TWO is the best thing I've ever bought."

NOW ONLY £10



Padlock is our top seller for simple disc security.

"Fantasy offers a wider range of effects than FontFX. It is a package for the perfectionist, whether professional or enthusiast."

NOW ONLY £15

"DrawBender is quite stunning."

NOW ONLY £10

As well as letting you type all those extra characters, Special is the easiest way to examine new fonts.

HOW TO ORDER

VAT: Zero-rated items are marked V0. UK customers please add 17.5% to all other prices. EC customers outside the UK (including BFPO) please do the same unless you are VAT registered, in which case quote your international VAT number. Ours is GB 595 7258 84.

CARRIAGE IS FREE WITHIN MAINLAND UK IF YOU PAY ON ORDERING.

Overseas carriage: If you are paying by credit card we will add airmail and insurance at cost. Otherwise please add £6 (Europe) or at least £12 (elsewhere) for each software item and send a pounds sterling bank draft payable at a London clearing bank, or Eurocheques for not more than £100 each.

Credit cards are welcome. We do not charge your account until your order is fulfilled. Your name and address must be as known to the credit card company. If you are leaving an order on our answering machine please include your telephone number, the expiry date of your card, and your calculation of the total payment due. We will make no charge for credit card commission unless we have informed you first.

Official orders are welcome from UK government and educational institutions. Payment is due in 14 days. Invoices are subject to carriage and late payment charges.

Site licences are available for most products. Please check our prices.

All products, prices and specifications are offered in good faith and are subject to change without notice. We process all orders immediately, but suppliers do sometimes keep us waiting. Goods are guaranteed but we do not supply them on approval. Returns and cancellations can only be accepted by prior agreement and there may be a charge to cover the costs involved.

AUTHORISED ACORN DEALER

ICS (Ian Copestake Limited)

Dept B47, 1 Kington road, WIRRAL, Merseyside, L48 5ET

Tel: 051-625 1006

Fax: 051-625 1007



E&OE D61 93AU16

LICENSED CREDIT BROKER



PRICE CUTS FOR THE ARM3

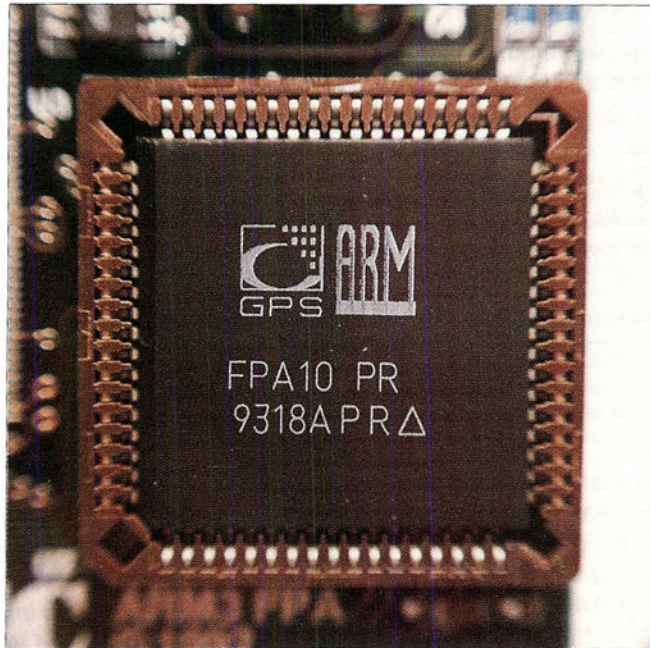
THE arrival of the FPA10 chip has led to price cuts by Arm3 upgrade specialists.

A year ago the average price of was £200 but Aleph One is now selling its Arm3 upgrade at just £129. Watford Electronics recently cut its price to £146.88 plus postage.

There has never been a better time to buy, but what if you want FPA10 compatibility? Simtec has announced its 25MHz Arm3 with FPA socket is now available with an FPA10 for £199 + VAT. This makes the Arm3 portion just £100 + VAT as the FPA10 chip is listed at £99 + VAT. The board without FPA costs £139 + VAT, down from £165 + VAT.

CJE Micros has announced its Arm3 with FPA10 will be £199 + VAT. CJE's solution adds a small, £5 daughterboard containing the FPA chip to its original Arm3 board. The daughterboard and FPA chip are available from CJE for £99 + VAT. CJE is offering a service to transfer socketed PGA-type Arm3s from older non-FPA-compatible Arm3

upgrades, of most makes, to its FPA-compatible board. CJE's Arm3 on its own has been cut to £135 + VAT from £149.



The arrival of the FPA10 has brought new life to the Arm upgrade market

Ifel is likely to sell its single board Arm3 plus FPA for around £200 + VAT. Prices for the Arm3 board without FPA will be cut too. Ifel will ship its 35MHz Arm3 for £139 + VAT.

But what of Aleph One's hinted-at Arm600 upgrade? Alex van Someren told us he's not sure there will be enough demand for the FPA10 chip to

warrant immediate development of his combined Arm600/FPA upgrade idea since there are also major problems to get Risc OS working on an Arm 600.

CJE Micros: (0903) 213361, Simtec: (0772) 812863e, Ifel: (0752) 840029, Aleph One: (0223) 811 679, Watford Electronics (0582) 487777.

SOFTWARE UPDATES

RISC Developments has improved three software packages; *Desktop Thesaurus*, *Hearsay II* and *Ovation*.

Thesaurus now has nearly 182,000 synonyms and 17,250 keywords. Colton Software has devised a software link so *Wordz* can exploit *Desktop Thesaurus* facilities; other word processors will follow.

Comms package *Hearsay II* has a 3D-style user interface and revised menus which incorporate function and hot-key prompts. There is support for external serial device drivers for hardware like The Serial Port's high-speed dual serial card.

Ovation 1.39 incorporates support for *ArtWorks* drawing files, though the user must have a copy of the *AWViewer* application. Upgrades are available in exchange for the original discs plus SAE or £2.

● Risc Developments has priced the *Sleuth* Optical Character Recognition package at £49 + VAT with £7.35 off for education customers; the package should be on sale now.

Risc Developments is on (0727) 840303.

SIMTEC PRICE CUT

SIMTEC has redesigned its A3000 Ram upgrade card because of difficulty in sourcing chips. This means 4Mb A3000s are now cheaper. A single card can progressively upgrade an A3000 from 1Mb



to 2Mb then 4Mb; the original A3000 1Mb Ram is retained.

The Simtec 1Mb board costs £47 + VAT and the four extra chips (2Mb) to upgrade to 4Mb are available for £60 + VAT as long as stocks last. The fully upgraded card costs £99 + VAT.

NEWTON MESSAGEPAD ON SALE

THE Apple Newton is now on sale in the US, starting at \$499. Unlike Amstrad's cheaper PDA pen-based organiser, the Newton uses the much more powerful 20MHz Arm610 (a derivative of the Risc processor used in the Archimedes).

Called the Newton MessagePad, the first of the Newton family is a sophisticated personal organiser, slightly larger than an Acorn PocketBook and with a large touch sensitive screen but no keyboard. All commands are either actioned by pressing icons or written using a plastic stylus.

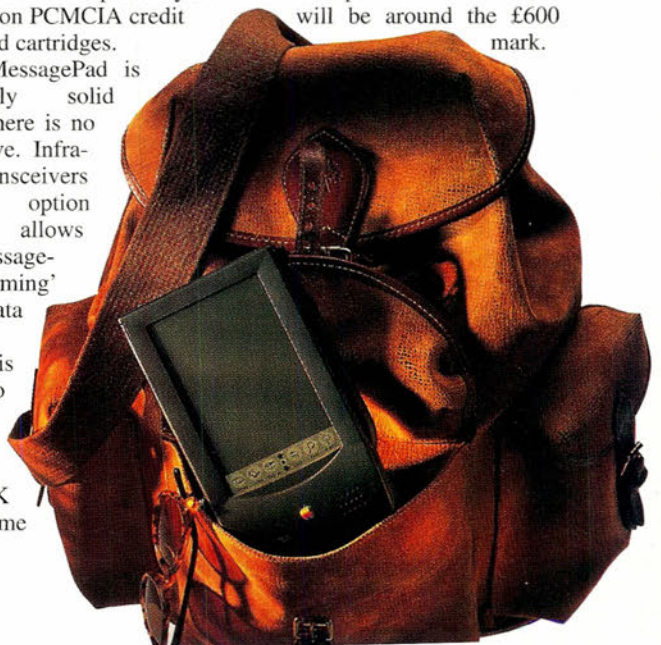
It understands joined-up writing and individually-written characters. Drawn geometric shapes are also recognised. Built-in functions include a diary, scheduler, and to-do list.

Hundreds of third-party companies have signed up to produce Newton software, most of which will probably be supplied on PCMCIA credit card-sized cartridges.

The MessagePad is completely solid state – there is no hard drive. Infra-red transceivers are an option which allows inter-MessagePad 'beaming' or data transfer.

Apple is due to launch the Newton in the UK any time

now, with Sharp also expected to ship its own version at the same time. Predictions are that the UK price of the Newton will be around the £600 mark.





The ideA range

ICS was the first company to offer IDE products for Acorns back in 1990; now they are the standard choice for new Acorn computers. Building on three years' experience we have continually improved our IDE filing

system. It now offers the highest level of RISC OS compliance, and compatibility with at least 45 different hard discs tested by us. Can any other supplier make this claim?

Our IDEFS abolishes the RISC OS limit of 512 Mb, and offers extra features such as password protection, background operation, disc partitioning, and power saving (which allows some discs to stop spinning when idle).

Partitions can have different levels of protection. Family or pupils can access some of your files while you keep others safely out of their reach. Or you can simply protect the whole disc (reformatting is not required for this).

Our hard disc upgrade kits are based around two internal interfaces at present: IDEA3IN for the A3000 Series, and IDEARCIN for the A300/A400/A500 Series. All kits are designed to a high standard and include all the parts you will need.

IDEA3IN upgrade kits include an I²C expansion socket as standard. They come with a 2½" disc already attached, and are easy to fit once you have opened up your computer. False rumours have been spread in the past (by sellers of SCSI hard discs) that internal upgrades might not be safe in an A3000. In three years we have never heard of an actual problem, but please ask Acorn's Technical Department if you wish to be reassured.

IDEARCIN upgrade kits provide a fast 16-bit link all the way from the computer to the hard disc. They can even be fitted to an A310 without a backplane – quite a cost saving. A second hard disc can easily be added later if required.

Interfaces and hard discs can also be bought separately. By shopping around you may even save a few pounds. But beware: not all IDE hard discs work with all interfaces, and if you have a problem it may be difficult to decide who should put it right. We recommend buying a complete kit from one source.

WIZZO is the name given to our IDE filing system when it is supplied as a single rom chip. Wizzo5 is for the A5000, and Wizzo4 is for the A4. You should buy a Wizzo if you need password protection or wish to use larger hard discs. (Wizzo4 has been delayed slightly – we are adding a feature to ensure compatibility with possible future A4 upgrades).

A Wizzo rom by itself will only produce a slight speed improvement. If you need speed in an A5000, fit an IDEARCIN interface instead. Up to 60% improvement can then be achieved, but this does depend which hard disc you use so do check with us first.

How to read our ideA product references

A number at the end is the nominal hard disc capacity in megabytes. We usually round this down, so the actual formatted capacity may be higher. All discs have auto-parking. Average access times vary but all are below 20 ms.

All prices shown exclude VAT and are subject to change without notice. The cost to us for hard discs can vary enormously from week to week – not always downwards! Your local dealer can obtain ideA products from us or from a distributor.

Archimedes A300/A400/A500 Series Internal Upgrades

Package includes formatted hard disc, ideA interface card, hard disc cradle and fittings, fan kit, replacement multi-purpose LED (power and drive status), manual with fitting instructions. Can be fitted to an A310 without a backplane. If a backplane is used it must be a 4-layer type. Easily fitted by most users.

| | | | |
|--------------|------|--------------|------|
| IDEARCIN 80 | £225 | IDEARCIN 240 | £425 |
| IDEARCIN 100 | £255 | IDEARCIN 330 | £500 |
| IDEARCIN 120 | £275 | IDEARCIN 426 | £575 |
| IDEARCIN 170 | £305 | IDEARCIN 540 | £799 |

A3000 Series Fully Internal Upgrades

Package includes formatted hard disc mounted on ideA interface card, manual with fitting instructions. Fully internal, using internal expansion slot. Co-exists with floppy drive and memory upgrades. Fits the new 1992 computers. Easily fitted subject to Acorn warranty stipulations.

| | | | |
|---------------------------------------|------|-------------|------|
| IDEA3IN 40 | £225 | IDEA3IN 120 | £350 |
| IDEA3IN 60 | £275 | IDEA3IN 130 | £450 |
| IDEA3IN 80 | £325 | IDEA3IN 209 | £499 |
| A3000 FAN KIT (not usually required*) | | | £19 |

*Only required if the computer has been fully upgraded, e.g. with maximum memory AND Econet AND an external podule.

Separates for hard disc upgrades

We can only guarantee the performance of ideA interface cards with hard discs we have tested ourselves, so please check if in doubt. If you are buying a hard disc for an A5000 please say so. If you intend to fit the disc in addition to an existing one we need to know the make and model of the existing disc. Acorn's interface does not support all makes of disc, and some models will work as a second disc but not on their own.

Hard discs on their own are listed as, for example, IDEA 80. An S at the end indicates a 2½" disc.

| | |
|--|-----|
| IDEARCIN (Archimedes Interface for Internal disc(s)) | £60 |
| IDEA3IN (A3000 Interface for Internal disc) | £75 |
| ARCHIMEDES INTERNAL CRADLE KIT | £15 |
| ARCHIMEDES A300 / A400 SERIES FAN KIT | £15 |
| 4-SLOT 4-LAYER BACKPLANE | £52 |
| POWER CABLE FOR SECOND HARD DISC | £5 |
| A5000 SECOND HARD DISC FITTING KIT | £15 |

| | | | |
|---------|------|----------|------|
| IDEA80 | £179 | IDEA240 | £350 |
| IDEA100 | £215 | IDEA330 | £470 |
| IDEA120 | £245 | IDEA426 | £499 |
| IDEA170 | £275 | IDEA540 | £750 |
| IDEA40S | £140 | IDEA120S | £299 |
| IDEA60S | £200 | IDEA130S | £399 |
| IDEA80S | £245 | IDEA209S | £449 |

WIZZO IDE Filing System on rom

Package includes rom, manual and fitting instructions. Compatible with RISC OS 3.0 and 3.1. Allows up to four logical partitions over two physical drives. Each partition appears separately on the icon bar and can have different password protection. Makes use of existing Acorn hardware for maximum compatibility, but works with a wider range of hard discs. Security breaches using ADFS can be prevented. Can be fitted easily by a competent user.

Available now: WIZZO5 for A5000 introductory price £29

Available soon: WIZZO4 for A4 introductory price £29

Quantity discounts available • Dealer enquiries welcome

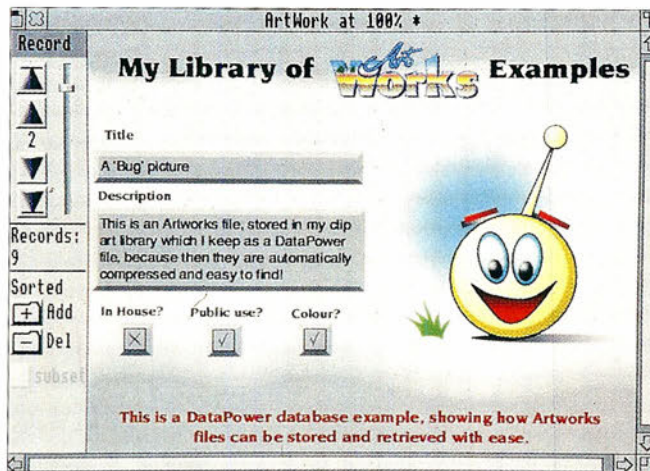
IOTA REVISES DATAPOWER

IOTA Software has added *ArtWorks* image compatibility to its *DataPower* database package. A client/server version of the database has also been completed.

DataPower has proved popular for graphics work so *ArtWorks* compatibility was an obvious development. The package uses on-the-fly data compression, so bulky graphical image data can be stored economically.

All sorts of fields can be attached to images for subsequent searches. Extensive implementation of Risc OS drag-and-drop actions makes it easy to import and export image files using a mouse. *ArtWorks* images can now also be used as part of database reporting documents.

The new network client/server version of *DataPower* means users can have multiple read/write access to a single database. For example, a whole class of students can add records to the same database at the same time. Special record-



ArtWorks image compatibility is now part of the *DataPower* package

locking allows someone to search and build reports even if someone else is adding more records at the same time.

Iota's Adrian Critchlow commented on the record-locking: 'It's really impressive if you are looking at a multi-record view and at the same time various people on the same network are all adding records to your database, because your screen updates

automatically and all the records are already sorted into order.'

Password protection is provided so, for example, teachers can update school record files from anywhere on the network.

Iota won't be charging registered customers for the luxury of upgrading to the client/server version of *DataPower*. Iota can be contacted on (0223) 421542.

DATABASE FOR LABEL

DIGITAL Phenomena has released a program for label printing. Each record can use ten easy-to-define fields, card index fashion. There is a text search option and records can be sorted according to criteria applied to any of the ten fields. Products of searches and sorts can be exported to create new databases. Each record can be printed as a label using all the traditional Risc OS attributes of variable print size, fonts and formats. *LabelBase* costs £49.95 (£199.95 site licence). *Digital Phenomena* are on (0705) 871530.



Records can use up to ten fields

SPLAT MATS

MOUSE mat a tad dull? You could go to the opposite extreme and get a Splat Mat. These psychedelic mouse mats cost £4.95

Interface is on (0257) 425839.



NETWORKED IMPRESSION

COMPUTER Concepts has made its networked *Impression* and *ArtWorks* compatible with new Ethernet hardware, which has recently appeared on the market from I³, Beebug and Digital Services. Network site-licence versions of *Impression* and *ArtWorks* are available for £660; upgrades are free to registered users.

CC CREATES NEW IMPRESSIONS

TWO new versions of *Impression* will be among the attractions on the Computer Concepts' stand at the Acorn World show.

There will also be a version of *ArtWorks* on CD-Rom, the long-awaited thesaurus, and a digital audio processor and editor called *AudioWorks*.

Impression Style and *Publisher* are to be the latest updated version of CC's *Impression* DTP/word processing family.

Computer Concepts prefers to limit its description of *Style* to that of a word processor, and says that its development was directly influenced by work on the *Advance* word processor for Acorn, as well as feedback from many of the 30,000+ existing users of *Impression* in its various forms.

Documents can be larger than available memory, there is a Tiff image loader, and 15- and 24-bits per pixel colour is supported for those with the

necessary video hardware.

The Computer Concepts thesaurus, which is based on the Collins/Gem Dictionary, will be included. A different version of the thesaurus will be sold on its own.

Style replaces *Impression Junior* and upgrades are available to registered users. *Style* will cost £99 + VAT.

Publisher is a re-worked version of *Impression* senior. It features all the key improvements found in *Style* as well as DTP enhancements like 24-bit RGB or 32-bit CMYK full colour separations, page bleed control, crop marks and a special OPI (Object Pre-press Interface) supplement for PostScript output, which references external image object files.

We can also expect a new single file document format, drag-and-drop editing, revised ruler control, paragraph styles and selection, crop marks and many more features too numerous to mention in the space available.

The *ArtWorks* CD-Rom contains around 200Mb of clip art and fonts as well as the application itself. 95% of the 'serious' entries to CC's recent clip art competition will be on the CD.

A second *ArtWorks* CD will act as a demonstration disc featuring all the clip art but just the *ArtWorks* viewer instead of the full application.

New hardware products will also be featured by Computer Concepts. A new four-colour 360dpi inkjet printer is promised at a very competitive price, complete with Turbo-Driver support.

Secondly, and in conjunction with Wild Vision, what's described as the 'ultimate' multimedia product for Acorn machines will be unveiled.

You can also expect a true 24-bit colour version of the Colour Card graphics accelerator board.

Computer Concepts is on (0442) 63933; Wild Vision can be contacted on 091-519 1929.

STALLION'S AUTUMN ALMANAC

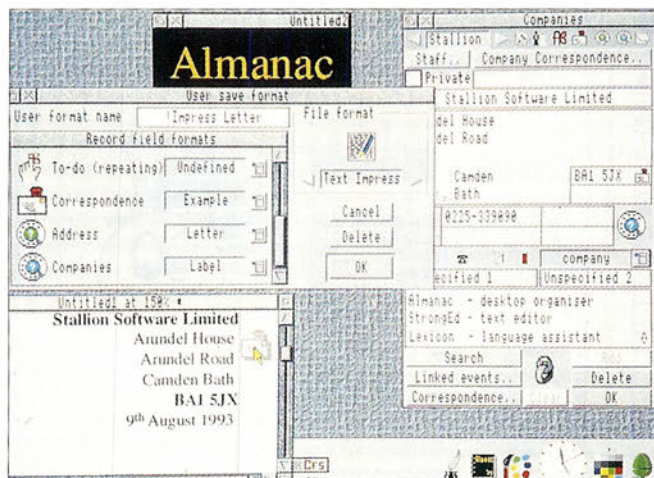
STALLION Software has produced an updated version of *Almanac*, its desktop business and personal organiser package.

Almanac 2 features 3D dialogue boxes and improved icons; there are new data import/export options, notes are extendable and the address database is now compatible with *FaxPack*.

Almanac 2 will be at the old price of £72.50 until the Acorn World show and existing *Almanac* users can upgrade for free by returning their original discs to Stallion.

Also from Stallion this month comes version 2 of the *Lexicon* language learning aid which now incorporates the same 3D-look as *Almanac 2* plus it includes 'Cloze' word-elimination testing.

Russian, German and French versions of *Lexicon* are available at £70.50 and there is a 20



Almanac is now out in a new version, complete with 3D icons

per cent discount for education customers. Finally, a help utility using *StrongHLP* has been produced for programmers who use Arm assembler.

The standalone program is called *Assembler Help* and includes easily-accessible

information on Arm processor and floating point instructions plus assembler directives, variables, macros, and so on. *Assembler Help* costs £15 + VAT.

Stallion Software, is on (0225) 339090.

In brief

Chip price hike

The recent explosion at a Japanese plastics factory has thrown prices in the computer memory chip industry into disarray.

The factory supplied chip-packaging plastic resin for around 60 per cent of the world's memory chips supply. Panic has doubled prices in just a few weeks. It's difficult to tell how long the price panic will last or how badly the Acorn memory upgrade market or even Acorn's manufacturing itself will be affected.

ScanLight for A3000/4000

ScanLight Video, the new combined video digitiser and scanner interface launched last month is now available for the A3000/4000 range.

CC points out that users of these Acorn machines are probably more likely to appreciate the saving of an expansion slot than most. As with the full-size module version, the mini-module ScanLight Video costs £220 + VAT.

Live'93

Acorn is to exhibit at a major consumer electronics show in London between 16-20 September. The show, Live'93, will take place at Olympia in London and is sponsored by News International newspapers *The Times*, *Today* and *The Sun*.

Exhibits will cover hi-fi, video, telecommunications and of course computing, with the accent on multimedia. Tickets cost £7 each with discounts for families. The ticket hotline is 071-373 8141.

Acorn C User Group

The C User Group UK has decided to open a new sub-group to concentrate on C-programmers within the Acorn world. The group will have its own bi-monthly magazine called CAUGers (C Acorn User Group).

Featured in the magazine will be programming hints and tips, tutorials and reviews. To join the CAUG you need to join the main CUGUK, which costs £12 a year and add £5 for the Acorn specific sub-group. More details are available by writing to Francis Glassborow at 64 Southfields Road, Oxford, OX4 1PA.

S-BASE NETWORK

LONGMAN Logotron has announced the release of *SBase Developer Plus*. This new package brings *SBase* to networking. It allows the user to develop *S-Base* database systems to be run across a network.

To access the networked versions, users can buy the cheaper *SNet* application. This is the only package that can access *S-Base Developer Plus* applications across a network –

the original *SBase* is not sufficient. *SNet* is sold as a separate package. *SBase Developer Plus* is priced at £299 single user, or £800 for an education site licence. *S-Net* server costs £299 for an education site licence. An upgrade from *S-Base Developer* to *SBase Developer Plus* costs £100, the price differential between the two packages.

Longman Logotron is on (0223) 425558.

NEW FOR HOW OLD?

A BIRMINGHAM Acorn dealer got a bit of shock when a local school applied to take advantage of the Acorn Xchange scheme, which encourages schools to turf out

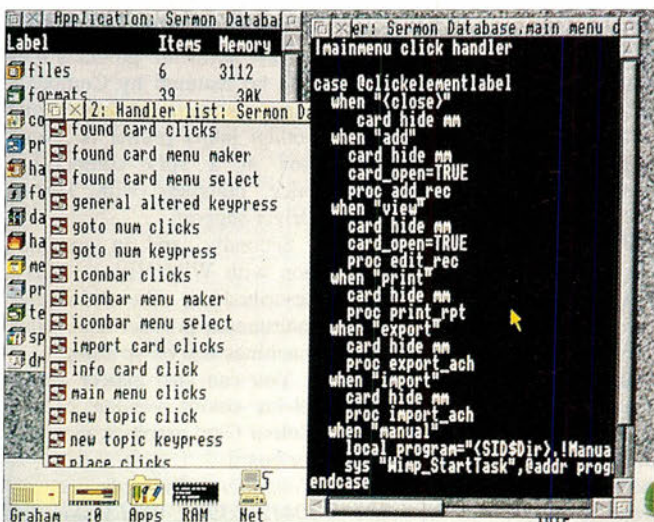


redundant computers in part exchange for nice new Acorns.

Daco Software was confronted by a 30-year old Honeywell minicomputer.

The antique was presented to Daco by Bromsgrove Lower School, which, in return, ordered an A5000 and a couple of A3020s.

Acorn is on (0223) 254254



Now *SBase* developers can opt for a network environment

STEP UP TO EUREKA v.2 AND SAVE OVER £40

EUREKA brought the power and innovative features of the very latest in easy-to-use spreadsheet technology to all RISC OS users. And now EUREKA version 2 has even more to offer you:

In fact, there are over 100 individual improvements upon version 1, including extended documentation and a fully comprehensive index.

What's new in Eureka version 2

- Scale printing of worksheets and print-to-fit a single page
- Worksheet zoom in and out
- Display (and print) formulas
- Worksheet find and replace
- Improved worksheet linking
- Automatic loading of any supporting documents
- Fully compacting memory manager - dynamically releases memory when you close a sheet
- Palette editor - allows any possible colour to be used in a worksheet or chart
- Eureka macrosheets
- Complete macro language for creating custom worksheet functions
- User definable page breaks and set print titles - for large worksheets
- Function key strip
- Chart series editor for direct editing of data series
- Automatic line of best fit for scatter charts
- Display / hide points on scatter charts
- Charting of multiple selections
- Save a selection as a worksheet, Lotus 123 file, CSV, SID or drawfile

If you already use another RISC OS spreadsheet, here's an offer you just can't refuse!

Just tell us what it is, and where and when you bought it, and we'll supply you with a full copy of EUREKA version 2 at the unrepeatable special offer price of £82.10 (£99.99 including p&p and VAT). That's a saving of over £40 on the RRP.

But remember, this very special launch offer must end on the 17th of September, 1993, and definitely will not be repeated. Don't be disappointed, claim your own copy of EUREKA version 2 today!

ORDER FORM

I am currently using

☐ Schema ☐ Pipedream ☐ Logistix

Other _____ (please specify)

I bought it from _____

Date purchased _____

Please send me _____ copy/copies of Eureka @ £82.10 (£99.99 including £3.00 p&p and VAT) per copy

☐ I enclose a cheque for _____ made payable to Longman Logotron

☐ Please debit my Access/Visa account no _____

Expiry date _____

Signed _____

Name _____

Address _____

Postcode _____

Telephone _____

AU/10/93

Please return your order to:

Longman Logotron Sales Department
124 Cambridge Science Park
Milton Road
Cambridge
CB4 4ZS

Tel: (0223) 425558

Fax: (0223) 425349



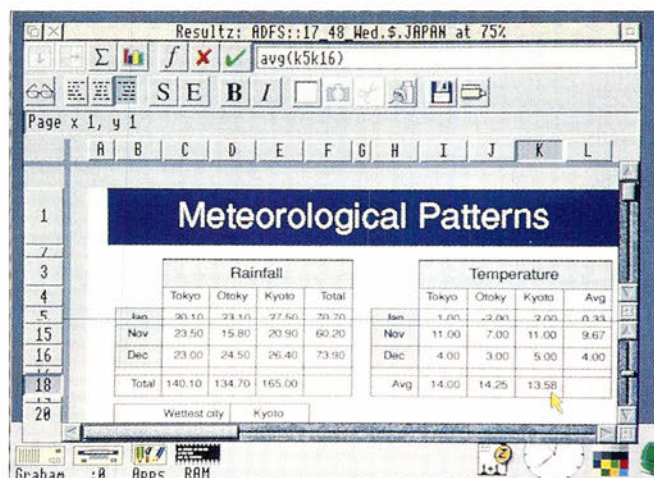
Eureka will run on any RISC OS machine with at least 2MB of RAM. RISC OS 3.1 recommend.

COLTON SETS OFF FIREWORKZ

COLTON Software has released early details of its latest offering, *Fireworkz*. This will be a combination of the *Resultz* spreadsheet and *Wordz* word processor and brings Colton full circle to its original combined spreadsheet and word processor, *Pipedream*.

Fireworkz is an apparent improvement, in that it doesn't suffer from any of the compromises and limitations of the *Pipedream* user interface. *Resultz* and *Wordz* as separate applications have a degree of data communication between them, but you can't edit a *Resultz* sheet within a *Wordz* document using *Wordz*, or vice versa.

Effectively, *Fireworkz* will enable this. Colton will release further details soon, and hopes



Fireworkz brings you Resultz and Wordz in one package

to have *Fireworkz* ready for the Acorn World show. Also at the show will be *Recordz*, the new database application, and

the next stage in the Colton 'Z' family.

Colton Software is on (0223) 311881.

DESKTOP OFFICE

MINERVA Software has incorporated an Acorn PocketBook/Psion Series 3 database facility into its *Desktop Office* integrated software.



This enables database files to be entered and updated on an Archimedes using the *Desktop Office* database module and exported to the PocketBook/Series 3, or vice versa, through the Acorn A-Link serial port.

Anyone who has attempted to enter a substantial amount of data into a PocketBook will know how difficult the tiny keyboard makes this. By being able to make use of the full-size keyboard of your desktop machine the task is no longer the fiddly chore of old.

Desktop Office will cost you £79.95 + VAT and existing users of the software can upgrade for £10 + VAT.

RISC OS 3.1 UPGRADE OFFER EXTENDED

IF you haven't upgraded to Risc OS 3.1 and thought you had missed the introductory offer which expired recently, relax - Acorn has extended it until the end of October.

Acorn's product manager, Neil Gardner, commented: 'When we introduced the upgrade last September we offered it at a very attractive price. However, as some of our customers were not aware this was only for a limited period, we are extending the offer for another three months.'

An even cheaper upgrade for

A5000 owners with no new manuals has been discontinued. Gardner commented: 'The upgrade for existing A5000 owners to move from OS 3.0 to 3.1 has resulted in the offer being taken up by the majority of this potential market, so we feel the time is right to withdraw this part of the special offer.'

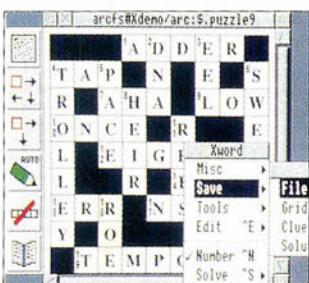
Sticking with Risc OS 2 could be a false economy as more software appears needing OS 3+. The OS 3.1 upgrade kit remains at £49 until the end of October when it reverts to £89.

PANDA CROSSWORDS

THE Risc OS crossword generator and publisher, *Xword*, is now available from Panda Discs in Staffordshire.

Any size puzzles can be generated, grids are automatically produced, text files can be dragged and dropped onto the puzzle for automatic placing, a dictionary is included and puzzles can be output as *Draw* files. Foreign language dictionaries are also on the way.

Panda Discs points out that *Xword* can be used not only to create crosswords, but to solve



existing ones too. So no more struggling over that final clue. *Xword* is priced £44.95.

For more details ring (0902) 850605

In brief

Open day

Acorn dealer Selective Computer Services is to hold an open day at the Kegworth Hotel on 21 November. The venue can be found at Kegworth village, Derbyshire, near junction 24 of the M1. Selective is an Acorn-approved CD-Rom supplier. For more information call (0332) 690691.

Lynsoft moves

Lynsoft, best known for the *Survivor* adventure game, has moved to 32 Irvin Avenue, Saltburn-by-Sea, Cleveland TS12 1QH. Lynsoft's telephone number, (0287) 624843, remains unchanged.

AKF18 problems

Some batches of Acorn AKF18 multi-sync monitors have been prone to premature component failure. Acorn is addressing this by fixing the problem free, even outside the standard 12-month warranty period in some cases. If you have a faulty AKF18 older than 12 months it is worth seeing whether it is eligible for free repair via your Acorn service centre.

Acorn address

Acorn moved to its new HQ, Acorn House, at Vision Park, north of Cambridge on 18 August. The address is Acorn Computers, Acorn House, Vision Park, Histon, Cambridge, CB4 4AE. Phone: (0223) 254254, Fax: (0223) 254262.

Arm600 not dead

The Arm600 processor might not be off Acorn's product agenda after all.

Despite the emphasis on the Arm700, Malcolm Bird, Acorn's technical director, has told *Acorn User* that now Arm Ltd has reduced the cost of the device compared to the Arm700, it has become attractive again, perhaps for lower cost models in the next generation of machines.

Acorn afloat

Cowes software company, Computer Tutorial Services (CTS) used an A5000 and A4 at a recent Cowes regatta. CTS produced detailed race results as well as storing cumulative points to eventually identify winning yachts.

FLOPPY DISC DRIVES

| | | | |
|-------|--------------------------|----------|--------|
| 0128g | 3.5 2nd Drive Kit | RISC Dev | 125.00 |
| 0279g | 400 Series 2nd Floppy Dr | Acorn | 70.00 |
| 0604g | CD8005 Dual 40/80T Drive | Cumana | 225.00 |
| 0617g | CS354 3.5 + PSU Drive | Cumana | 94.00 |
| 0603g | GS400 40/80T + PSU | Cumana | 119.00 |
| 0616g | CSX354 Disc Drive | Cumana | 79.00 |
| 0602g | CSX400 40/80T Drive | Cumana | 99.00 |

HARD DISC DRIVES

| | | | |
|-------|--------------------------|----------|--------|
| 5283g | A3000 External IDE 120Mb | RISC Dev | 369.00 |
| 5285g | A3000 External IDE 210Mb | RISC Dev | 489.00 |
| 5286g | A3000 External IDE 450Mb | RISC Dev | 689.00 |
| 5270g | A3000 Internal IDE 20Mb | RISC Dev | 199.00 |
| 5272g | A3000 Internal IDE 80Mb | RISC Dev | 299.00 |
| 5273g | A3000 Internal IDE 120Mb | RISC Dev | 389.00 |
| 5275g | A3000 Internal IDE 210Mb | RISC Dev | 539.00 |
| 5240g | A3010 Internal IDE 20Mb | RISC Dev | 179.00 |
| 5242g | A3010 Internal IDE 80Mb | RISC Dev | 289.00 |
| 5243g | A3010 Internal IDE 120Mb | RISC Dev | 379.00 |
| 5245g | A3010 Internal IDE 210Mb | RISC Dev | 529.00 |
| 5230g | A3020 Internal IDE 20Mb | RISC Dev | 125.00 |
| 5232g | A3020 Internal IDE 80Mb | RISC Dev | 229.00 |
| 5233g | A3020 Internal IDE 120Mb | RISC Dev | 299.00 |
| 5235g | A3020 Internal IDE 210Mb | RISC Dev | 479.00 |
| 5851g | A4 60Mb HD Upgrade | Acorn | 350.00 |
| 5296g | A5000 120Mb 2nd Drive | RISC Dev | 219.00 |
| 5294g | A5000 210Mb 2nd Drive | RISC Dev | 319.00 |
| 5298g | A5000 450Mb 2nd Drive | RISC Dev | 519.00 |
| 5263g | Arch External IDE 120Mb | RISC Dev | 359.00 |
| 5265g | Arch External IDE 210Mb | RISC Dev | 479.00 |
| 5256g | Arch External IDE 450Mb | RISC Dev | 579.00 |
| 5266g | Arch External IDE 450Mb | RISC Dev | 679.00 |
| 5290g | Arch IDE 20Mb Hard Card | RISC Dev | 199.00 |
| 5291g | Arch IDE 60Mb Hard Card | RISC Dev | 359.00 |
| 5292g | Arch IDE 80Mb Hard Card | RISC Dev | 299.00 |
| 5293g | Arch IDE 120Mb Hard Card | RISC Dev | 379.00 |
| 5295g | Arch IDE 210Mb Hard Card | RISC Dev | 529.00 |
| 5253g | Arch Internal IDE 120Mb | RISC Dev | 259.00 |
| 5255g | Arch Internal IDE 210Mb | RISC Dev | 379.00 |

LEADS/CABLES

| | | | |
|-------|------------------------|--------|-------|
| 0569b | Printer Lead 1.8m Arch | BEEBUG | 5.91 |
| 0425b | Printer Lead 2m Arch | BEEBUG | 7.62 |
| 0424b | Printer Lead 3m Arch | BEEBUG | 8.47 |
| 0578c | Printer Lead 5m Arch | BEEBUG | 16.98 |

MODEMS/COMMS SOFT/HARDWARE

| | | | |
|-------|--------------------------|----------|--------|
| 5913b | Chatter | 4Mation | 34.00 |
| 0093c | Hearsay II | RISC Dev | 75.00 |
| 0776e | Linnet 2400 Modem | Pace | 255.28 |
| 0779e | Linnet Plus Modem | Pace | 119.11 |
| 0777e | Linnet Quad Modem | Pace | 297.83 |
| 3111g | SM2400 + Hearsay II+Lead | BEEBUG | 139.00 |

MONITORS & ACCESSORIES

| | | | |
|-------|-------------------------|------------|---------|
| 0190g | Acorn AKF18 Multiscan | Acorn | 275.00 |
| 0182g | Acorn AKF30 Monitor | Acorn | 220.00 |
| 0180g | Acorn AKF40 Monitor | Acorn | 220.00 |
| 0532g | Cub 2038 20in Monitor | Microvitec | 999.00 |
| 0525g | Cub-Scan 1440 Monitor | Microvitec | 399.00 |
| 0546e | Monitor Filter | Memorex | 78.60 |
| 0503g | Phillips Green Monitor | Phillips | 87.00 |
| 0501g | Ranger 5017 Monitor | Aydin | 853.00 |
| 0502g | Ranger 5021 Monitor | Aydin | 1380.00 |
| 0545d | Screen Filter 14 C.Fibr | BEEBUG | 24.64 |
| 0544g | TouchScreen for CUB3000 | Microvitec | 95.00 |

NETWORKS

| | | | |
|-------|--------------------------|-----------|--------|
| 5076b | IAPPS | Angelsoft | 100.00 |
| 4601e | A3000/3010 Ethernet Card | RISC Dev | 139.00 |
| 5025b | A3020/4000 Econet Module | Acorn | 49.00 |
| 4602e | A3020/A4000 Eth'net Card | RISC Dev | 139.00 |
| 5853c | A4 Econet Upgrade | Acorn | 50.00 |
| 4600e | Arch/A5000 Ethernet Card | RISC Dev | 139.00 |
| 5005c | AUN Level IV Fileserver | Acorn | 394.00 |
| 5006c | AUN Level IV SL Upgrade | Acorn | 199.00 |
| 5003b | AUN Level IV Upgrade | Acorn | 30.00 |
| 5075b | Classprint LD | Oak | 75.00 |
| 5017b | Econet Upgrade M128/Arch | Acorn | 47.95 |
| 5037e | Ethernet A3020/A4000 Int | Acorn | 149.00 |
| 5038e | Ethernet Card for A4 | Atomwide | 199.00 |
| 5008c | TCP/IP Programmers Pack | Acorn | 50.00 |
| 5009c | TCP/IP Protocol Suite | Acorn | 199.00 |

POCKETBOOK ACCESS/SOFTWARE

| | | | |
|-------|--------------------------|--------|--------|
| 0581b | A-Link | Acorn | 42.51 |
| 0584b | Flash Disc 256K | Acorn | 59.53 |
| 0588c | Flash Disc 512K | Acorn | 85.06 |
| 0587b | Mains Lead - Pocket Book | Acorn | 12.72 |
| 0586b | OPL Editor | Acorn | 59.53 |
| 0390e | Pocket Book Computer | Acorn | 170.17 |
| 0591b | Pocket Book Desk Stand | Widget | 13.61 |
| 0589b | Pocket Book Finance Pack | Widget | 59.53 |
| 0590b | Pocket Book Games Pack | Widget | 42.51 |
| 0392g | Psion 3 256k | Psion | 195.00 |

| | | | |
|-------|---------------------------|-------|--------|
| 0583b | RAM Disc 128K - Pocket Bk | Acorn | 51.02 |
| 0596b | Schedule - Pocket Book | Acorn | 16.98 |
| 0597g | Schedule Class Pack | Acorn | 170.17 |

PRINTER ACCESSORIES & PAPER

| | | | |
|-------|--------------------------|------------|-------|
| 0428c | Crossover switch 2x2 | BEEBUG | 34.00 |
| 0407c | Labels 1000 x 3.5 | Label-Trac | 6.17 |
| 0454c | Labels 2000 3.5 | Label-Trac | 10.50 |
| 0515c | Laser Printer Labels | Avery | 9.96 |
| 0422c | Laser Printer Paper | BEEBUG | 6.34 |
| 5644d | Paper 15.3x11 60gsm 1pt | BEEBUG | 17.00 |
| 5645d | Paper 15.3x11 70gsm 1pt | BEEBUG | 20.00 |
| 0453d | Paper 2pt 9.5x11 60gsm | BEEBUG | 23.00 |
| 5641d | Paper 9.5x11 1pt 70gsm | BEEBUG | 13.00 |
| 5642d | Paper 9.5x11 1pt 85gsm | BEEBUG | 11.00 |
| 5640d | Paper 9.5x11 60gsm 1pt | BEEBUG | 12.00 |
| 0455d | Paper A4 70gsm Fanfold | BEEBUG | 14.40 |
| 5643d | Paper A4 90gsm 1-part | BEEBUG | 12.60 |
| 0405d | Paper A4 Handipack | BEEBUG | 11.26 |
| 0421c | Photocopy Paper | BEEBUG | 3.36 |
| 0538c | Print Sharer 2 to 1 Auto | BEEBUG | 32.34 |
| 0539c | Print Sharer 4 to 1 Auto | BEEBUG | 42.55 |
| 0427c | Printer Sharer 2 to 1 | BEEBUG | 16.98 |
| 0567c | Printer Sharer 4 to 1 | BEEBUG | 28.57 |

PRINTERS

| | | | |
|-------|--------------------------|-------|---------|
| 0333g | Acorn Inkjet Printer | Acorn | 234.89 |
| 0364g | Canon BJ10sx - Black | Canon | 185.00 |
| 0365g | Canon BJ10sx - White | Canon | 185.00 |
| 0451g | Canon BJ20 - Cream | Canon | 265.00 |
| 0347g | Canon BJ200 Printer | Canon | 280.00 |
| 0346g | Canon BJ230 Printer | Canon | 322.00 |
| 7510g | Canon BJ300 Printer | Canon | 349.00 |
| 7511g | Canon BJ330 Printer | Canon | 380.00 |
| 7525g | Canon BJC800 Printer | Canon | 1370.00 |
| 0380g | Epson FX1050 Printer | Epson | 403.75 |
| 0328g | Epson FX850 Printer | Epson | 323.75 |
| 0388g | Epson LQ100 Printer | Epson | 176.40 |
| 0326g | Epson LQ1060 Colour | Epson | 723.75 |
| 0375g | Epson LQ1070 Printer | Epson | 368.40 |
| 0376g | Epson LQ1170 Printer | Epson | 517.20 |
| 0379g | Epson LQ200 Printer | Epson | 182.00 |
| 0329g | Epson LQ450 Printer | Epson | 238.26 |
| 0374g | Epson LQ570 Printer | Epson | 240.00 |
| 0327g | Epson LQ860 Colour | Epson | 543.75 |
| 0382g | Epson LQ870 Printer | Epson | 424.80 |
| 0377g | Epson LX100 Printer | Epson | 155.00 |
| 0386g | Epson LX1050 Printer | Epson | 329.00 |
| 0378g | Epson LX400 Printer | Epson | 136.13 |
| 0322g | Epson LX850 Printer | Epson | 172.50 |
| 0381g | Epson Stylus 800 Printer | Epson | 239.00 |
| 0461g | HP Deskjet Portable | HP | 295.00 |
| 7530g | HP Laserjet 4 Printer | HP | 1120.00 |
| 0490g | HP500C Colour Deskjet | HP | 269.00 |
| 0452g | HP510 Deskjet Printer | HP | 235.00 |
| 0494g | HP550C Colour Deskjet | HP | 449.00 |
| 0497e | LaserDirect HiRes Card | CC | 324.00 |
| 0496g | LaserDirect HiRes4 | CC | 895.00 |
| 7500g | LaserDirect HiRes8 | CC | 1275.00 |
| 7560g | Star Laser 8 III | Star | 939.00 |
| 0483g | Star Laser 8 StarScript | Star | 1179.00 |
| 7570g | Star Laser LS-5 | Star | 525.00 |
| 7575g | Star Laser LS-5EX | Star | 649.00 |
| 7580g | Star Laser LS-5TT | Star | 845.00 |
| 0441g | Star LC-100 Colour | Star | 149.00 |
| 0343g | Star LC-15 Printer | Star | 193.00 |
| 0471g | Star LC-20 Printer | Star | 113.00 |
| 0436g | Star LC-200 Colour | Star | 160.00 |
| 0444g | Star LC24-100 Printer | Star | 162.00 |
| 0338g | Star LC24-15 Printer | Star | 249.00 |
| 0367g | Star LC24-20 II Printer | Star | 189.00 |
| 0337g | Star LC24-20 Printer | Star | 184.00 |
| 0402g | Star LC24-200 Colour | Star | 220.00 |
| 0300g | Star SH44 Colour Printe | Star | 475.00 |
| 0442g | Star SJ48 Inkjet Printer | Star | 189.00 |
| 0472g | Star XB24-200 Colour | Star | 341.00 |
| 0473g | Star XB24-250 Colour | Star | 407.00 |
| 0477g | Star ZA-200 Printer | Star | 269.50 |
| 0478g | Star ZA-250 Printer | Star | 341.00 |

SCANNERS

| | | | |
|-------|--------------------------|----------|--------|
| 5506g | ScanLight II A4 A3000 | CC | 285.00 |
| 1963g | ScanLight II A4 Arch | CC | 285.00 |
| 1962g | ScanLight Inr 256 - Arch | CC | 185.00 |
| 1960g | ScanLight Inr 256 A3000 | CC | 185.00 |
| 1970g | Scanlight Pro+SCSI A5000 | CC | 699.00 |
| 1964g | Scanlight Pro. Only | CC | 550.00 |
| 0732e | Scanlight Sheet Feeder | CC | 139.00 |
| 1958g | Scanlight Video - A5000 | CC | 218.00 |
| 0117g | Spectra (A3000 External) | RISC Dev | 559.00 |
| 0119g | Spectra (A3000 Internal) | RISC Dev | 549.00 |
| 0118g | Spectra Archimedes/A5000 | RISC Dev | 549.00 |

SITE LICENCES

| | | | |
|-------|---------------------------|-------|--------|
| 1392c | Advance Primary Licence | Acorn | 181.00 |
| 1391c | Advance Secondary Licence | Acorn | 440.00 |

| | | | |
|-------|----------------------------|----------|--------|
| 5379c | Artworks Network Licence | CC | 650.00 |
| 5376d | Artworks Site Licence | CC | 543.00 |
| 5396c | Impression II Site Licence | CC | 542.00 |
| 5394c | Impression Network Licence | CC | 645.00 |
| 5315c | Ovation S.I. Pack | RISC Dev | 10.00 |
| 5312c | Ovation Site Licence | RISC Dev | 475.00 |
| 5372c | Pinpoint Site Licence | Longman | 386.00 |
| 5384c | Pipedream 4 Site Licence | Colton | 696.00 |
| 5368c | S-Base Network Licence | Longman | 272.00 |
| 5369c | S-Base Site Licence | Longman | 400.00 |
| 5382c | Squirrel Licence | Digital | 516.00 |

SOFTWARE - ACCOUNTING

| | | | |
|-------|----------------------|-----------|--------|
| 5458c | Business Accounts | Minerva | 275.00 |
| 1915c | Financial Accountant | Silicon V | 227.17 |
| 0947b | Home Accounts | Minerva | 33.00 |
| 0926c | Nominal Ledger | Minerva | 79.95 |
| 5470c | Payroll Manager | Silicon V | 82.00 |
| 0922c | Personal Accounts | Apricote | 29.00 |
| 0920c | Prophet | Apricote | 131.00 |
| 0923b | Prophet Entry Level | Apricote | 8.00 |
| 0925c | Purchase Ledger | Minerva | 25.00 |
| 1917c | Share Holder | Silicon V | 102.13 |

SOFTWARE - CAD

| | | | |
|-------|----------------------|-----------|--------|
| 1909c | Arc PCB Professional | Silicon V | 234.00 |
| 0913c | Arc-PCB | Silicon V | 99.00 |
| 1931c | CADet | Minerva | 133.00 |
| 1932b | KiddiCAD | Oak | 58.00 |
| 0959c | Oak P.D.T. | Oak | 189.00 |
| 0958c | Oak PCB | Oak | 93.00 |
| 1945g | ProCAD | Minerva | 393.00 |
| 1910c | SolidCad | Silicon V | 78.00 |
| 1911c | SolidTools | Silicon V | 225.53 |
| 1936b | WorraCAD | Oak | 93.00 |

SOFTWARE - DTP

| | | | |
|-------|-------------------|----------|--------|
| 1113c | Impression II DTP | CC | 117.00 |
| 1115c | Impression Junior | CC | 64.00 |
| 0114 | Ovation Demo Disc | RISC Dev | 4.25 |
| 0108c | Ovation DTP | RISC Dev | 99.00 |

SOFTWARE - DTP TOOLS/UTILITIES

| | | | |
|-------|--------------------------|------------|--------|
| 1237b | Dabs Guide: Impression | Dabs P | 14.95* |
| 0096b | Desktop Thesaurus | RISC Dev | 19.00 |
| 1260b | DTP on the Arch Book | Sigma | 14.95* |
| 5440b | Equasor | CC | 36.00 |
| 1249c | First Impressions Manual | Word Proc | 29.95* |
| 1976a | Font FX | Datatore | 9.00 |
| 1921b | Font Pack Newhall | Acorn | 34.00 |
| 1922b | Font Selwyn/Sydney | Acorn | 34.00 |
| 1920b | Font Starter Pack | Acorn | 34.00 |
| 5783b | Glimpse | Sherston | 8.00 |
| 1269b | Good Impression Manual | Word Proc | 26.95* |
| 5731b | Image Outliner | Iota | 72.00 |
| 5464b | Impression Business Supp | CC | 38.00 |
| PFNTa | RISC User Fonts Disc | RISC Dev | 12.68 |
| 5526c | ShowPage | CC | 139.00 |
| 0099b | Sleuth OCR | RISC Dev | 49.00 |
| 5510b | Tracer | Midnight C | 46.00 |
| 0092b | TypeStudio | RISC Dev | 45.00 |

SOFTWARE - DATABASES

| | | | |
|-------|------------------------|-----------|--------|
| 5450b | Archivist Pro | Oregon | 38.00 |
| 5744c | Datapower | Iota | 129.00 |
| 1913c | DataVision | Silicon V | 77.00 |
| 5760b | Desktop Database | Iota | 52.00 |
| 1992c | Flexifile | Minerva | 73.00 |
| 5720b | Junior Database | Iota | 52.00 |
| 0917c | Knowledge Organiser II | Clares | 77.00 |
| 0098b | Masterfile 3 | RISC Dev | 49.00 |
| 0989c | Multistore II | Minerva | 123.00 |
| 1007c | Pinpoint | Longman | 69.00 |
| 1011b | Pinpoint Junior | Longman | 22.00 |
| 0931g | S-Base Developer | Longman | 146.00 |
| 0932g | S-Base Developer + | Longman | 268.00 |
| 0933c | S-Base Personal | Longman | 79.00 |
| 5447c | Squirrel | Digital | 120.00 |
| 0921c | System Del Plus V2 | Minerva | 39.99 |
| 5717b | Viewpoints Database | Sherston | 35.00 |

SOFTWARE - EDUCATIONAL

| | | | |
|-------|--------------------------|------------|-------|
| 5716b | 10/10 Early Essentials | 10outof10 | 19.00 |
| 5709b | 10/10 English | 10outof10 | 19.00 |
| 5718b | 10/10 Maths (Algebra) | 10outof10 | 19.00 |
| 5708b | 10/10 Maths (Numbers) | 10outof10 | 19.00 |
| 1343b | 1st Paint | Resource | 34.00 |
| 1238c | Acorn Educ Directory | Acorn | 4.95* |
| 5927b | Adventure Playground | Storm | 17.00 |
| 5920b | All About Me | Northern M | 14.00 |
| 5700b | Animated Alphabet | Sherston | 19.00 |
| 5781b | ArcVenture I- The Romans | Sherston | 30.00 |
| 5713b | ArcVenture II- Egyptians | Sherston | 29.95 |
| 5788b | ArcVenture III- Vikings | Sherston | 30.00 |
| 5789b | Badger Trails | Sherston | 36.50 |
| 5933b | Balloons & The Zoo | Topologika | 27.00 |

| | | | |
|-------|-------------------------|------------|--------|
| 5928b | Best Four Adventure | ESM | 45.00 |
| 5925b | Best Four Maths | ESM | 45.00 |
| 1344b | Blob 1 | Widget | 18.00 |
| 1345b | Blob 2 | Widget | 18.00 |
| 5488c | CableNews | Lingenuity | 136.00 |
| 1029b | Cateby Manor | Resource | 20.00 |
| 1358b | Concept Designer S/Ware | Longman | 22.00 |
| 5766b | Connections | Sherston | 27.00 |
| 5737b | Control Logo | Longman | 25.00 |
| 1355e | Count with Blob - C Kbd | Widget | 20.00 |
| 5763b | Crystal Rain Forest | Sherston | 34.50 |
| 5916b | Darryl The Dragon | 4Mation | 19.50 |
| 1008b | Dead Top Stories | Resource | 35.00 |
| 5701c | Desktop Folio | ESM | 60.00 |
| 0935b | Dread Dragon Droom | Resource | 29.95 |
| 9902b | First Logo | Longman | 21.00 |
| 5702b | Freddy Teddy | Topologika | 18.00 |
| 5703b | Freddy's Adventure | Topologika | 18.00 |
| 1193b | Fun School 2 (-6) | Europress | 16.98 |
| 1194b | Fun School 2 (6-8) | Europress | 16.98 |
| 1195b | Fun School 2 (8+) | Europress | 16.98 |
| 5704b | Fun School 3 (-5) | Europress | 17.00 |
| 5705b | Fun School 3 (5-7) | Europress | 17.00 |
| 5706b | Fun School 3 (7+) | Europress | 17.00 |
| 5791b | Fun School 4 (-5) | Europress | 17.00 |
| 5792b | Fun School 4 (5-7) | Europress | 17.00 |
| 5793b | Fun School 4 (7+) | Europress | 17.00 |
| 5491b | Genesis II | Oak | 99.00 |
| 5761b | Graph II | Sherston | 19.00 |
| 5782b | Highlighter | Sherston | 32.00 |
| 5738c | Insight | Longman | 68.00 |
| 1949c | Kid Pix | ESM | 34.00 |
| 5747b | Linkword - French | Minerva | 36.00 |
| 5748b | Linkword - German | Minerva | 36.00 |
| 5746b | Linkword - Spanish | Minerva | 36.00 |
| 0905c | Logo | Longman | 54.00 |
| 5471c | Maggie | Longman | 44.00 |
| 5798b | Micro French | LCL Soft | 20.00 |
| 5931b | Naughty Stories Vol 1 | Sherston | 48.00 |
| 5936b | Noddy's Playtime (3-7) | Jump Bean | 20.00 |
| 0928b | Numerator | Longman | 38.00 |
| 5923b | Pendown Etoiles | Longman | 49.00 |
| 1947b | Pendown Plus | Longman | 67.00 |
| 1959b | Pendown v2 | Longman | 45.00 |
| 5929b | Phases #3 | NW SEMERC | 19.00 |
| 1011b | Pirpoint Junior | Longman | 22.00 |
| 5784b | Pirates | Chalksoft | 18.00 |
| 5707b | Podd | ESM | 25.00 |
| 5926b | Primary Maths Course | LCL Soft | 24.00 |
| 5455b | ProSHEET | Silicon Vi | 39.00 |
| 5935b | Puddle & The Wardrobe | Topologika | 27.00 |
| 5710b | Space Mission Mada | Sherston | 23.00 |
| 5711b | Stig of the Dump | Sherston | 22.00 |
| 5924b | Story | H & H Soft | 16.98 |
| 1934c | Talking Pendown | Longman | 57.00 |
| 5921b | Teachers Cupboard | Sherston | 27.50 |
| 5712b | Teddy Bears' Picnic | Sherston | 23.00 |
| 5934b | The Playground | Topologika | 27.00 |
| 5485c | Topographer | Clares | 62.00 |
| 1341b | Touch Games 1 | Brill Comp | 20.00 |
| 1342b | Touch Games 2 | Brill Comp | 20.00 |
| 5431b | Touch Type | Iota | 35.00 |
| 5608b | Typing Tutor | Willow | 23.90 |
| 5930b | Wizards Revenge | Sherston | 17.00 |
| 5922b | Words & Pictures | Chalksoft | 18.00 |
| 5715b | Worst Witch | Sherston | 25.00 |

SOFTWARE - GAMES

| | | | |
|-------|--------------------------|------------|-------|
| 5786b | Aggressor | Atomic | 15.00 |
| 5468b | Air Supremacy | Superior | 15.50 |
| 1981b | Aldebaran | Arc Angels | 25.00 |
| 0936b | Alerion | Dabs P | 11.00 |
| 0997b | Arcade Soccer | 4th Dimens | 17.00 |
| PAOMa | ArCOnnibus Games | RISC Dev | 12.68 |
| 5435b | Battle Chess | Krisalis | 21.00 |
| 5451b | Black Angel | 4th Dim | 25.00 |
| 1978b | Break 147 & Superpool | 4th Dimens | 25.00 |
| 5437b | Champions | Krisalis | 22.00 |
| 5729b | Chequered Flag RISC OS 3 | CIS | 18.00 |
| 5532b | Chess 3D | Mic Power | 16.98 |
| 5572b | Chocks Away Compendium | 4th Dimens | 26.00 |
| 5573b | Chocks Away Extra Missio | 4th Dimens | 14.00 |
| 1995b | Chocks Away Mk II | 4th Dimens | 19.00 |
| 5566b | Chopper Force | 4th Dimens | 21.00 |
| 5714b | Christmas Adventure | Krisalis | 22.12 |
| 5577b | Chuck Rock | Krisalis | 17.00 |
| 5941b | Crystal Maze (Due Oct.) | Sherston | 34.00 |
| 5598b | Cyber Chess | 4th Dimens | 26.00 |
| 5452b | Cyborg | Alpine Sof | 19.00 |
| 5599b | Demons's Lair | 4th Dimens | 19.00 |
| 5448b | Dungeon | 4th Dimens | 25.00 |
| 5728b | E-Type Compendium | 4th Dimens | 18.00 |
| 1983b | Ego: Repton 4 | Superior | 17.00 |
| 5476b | Elite Gold | Hybrid | 32.00 |
| 5536b | Enter The Realm | 4th Dimens | 18.00 |
| 1982b | Fervour | Clares | 18.00 |

| | | | |
|-------|--------------------------|------------|-------|
| 5494b | Games Wizard | Leading Ed | 25.00 |
| 5795b | Gods | Krisalis | 19.00 |
| 5467b | Gribbly's Day Out | Coin-Age | 18.00 |
| 5444b | Guile | Dream | 22.00 |
| 1977b | Hero Quest | Krisalis | 22.00 |
| 5725b | Holed Out Compendium | 4th Dimens | 19.00 |
| 1993b | Interdictor 2 | Clares | 25.00 |
| 1988b | Iron Lord | UBI Soft | 14.00 |
| 5724b | James Pond | Krisalis | 19.00 |
| 1985b | Krisalis Collection | Krisalis | 20.50 |
| 5595b | Last Ninja | Superior | 18.00 |
| 5546b | Lemmings | Krisalis | 18.00 |
| 5463b | Lotus Turbo Challenge 2 | Krisalis | 19.00 |
| 5568b | Manchester Utd Europe | Krisalis | 19.00 |
| 5475b | Master Break | Superior | 14.00 |
| 1996b | Microdrive Golf 2 | CIS | 24.00 |
| 5578b | MiG 29 Super Fulcrum | Domark | 29.00 |
| 5794b | Oh No! More Lemmings | Krisalis | 15.00 |
| 5420b | Omar Sharif's Bridge | Krisalis | 19.00 |
| 5561b | P I A Sam 1 - Arch | Superior | 19.00 |
| 5569b | Pandora's Box | 4th Dimens | 19.00 |
| 5436b | Paradroid 2000 | Coin-Age | 20.00 |
| 5466b | Populous | Krisalis | 21.00 |
| 1904b | Provocator | Comp Tutor | 15.00 |
| 5422b | Quark | Oregon | 21.23 |
| 5797b | Quest For Gold | Krisalis | 18.95 |
| 5533b | Real McCoy I | 4th Dimens | 24.00 |
| 5565b | Real McCoy III | 4th Dimens | 24.00 |
| 5548b | Real McCoy IV | 4th Dimens | 27.00 |
| 5597b | Saloon Cars Deluxe | 4th Dimens | 24.00 |
| 5474b | Saloon Cars Extra Course | 4th Dimens | 15.00 |
| 5434b | Sim City | Krisalis | 23.00 |
| 5443b | Spheres of Chaos | Matt Black | 19.00 |
| 5799b | Slint Racer 2000 | 4th Dimens | 28.04 |
| 1986b | Superior Golf | Superior | 12.00 |
| 5790b | Swiv | Krisalis | 18.00 |
| 5438b | Technodream | Superior | 19.00 |
| 1997b | Virtual Golf | 4th Dimens | 25.00 |
| 1179b | Zarch | Superior | 14.00 |
| 5421b | Zool | Gremlin | 19.00 |

SOFTWARE - GRAPH/DRAW/PAINTING

| | | | |
|-------|------------------------|------------|--------|
| 5785b | 3D Construction Kit | Domark | 35.00 |
| 5521b | ArcLight | Ace | 43.48 |
| 1942b | ArcTist | 4th Dimens | 18.00 |
| 1103b | Artisan II | Clares | 42.00 |
| 1938d | Artworks | CC | 124.00 |
| 0962b | Atelier | Minerva | 68.00 |
| 5488c | CableNews | Lingenuity | 136.00 |
| 5912b | Chameleon | 4Mation | 33.00 |
| PCHWb | Chartwell | RISC Dev | 25.49 |
| 5914b | Craftshop 1 | 4Mation | 19.00 |
| 5915b | Craftshop 2 | 4Mation | 19.00 |
| 5479d | Designer V3 | Techsoft | 193.00 |
| 1937b | Euclid II RISCOS | Ace | 54.00 |
| 5520b | Film Maker | Silicon V | 86.91 |
| 1090c | Graph Box Professional | Minerva | 102.00 |
| 0912b | Graph Box v2 | Minerva | 56.00 |
| 5761b | Graph IT | Sherston | 19.00 |
| 5442b | Illusionist | Clares | 68.00 |
| 5734b | Image Animator | Iota | 68.00 |
| 0934b | Imagery | Palette S | 69.00 |
| 5919b | Jiglet | 4Mation | 19.00 |
| 1150b | Jigsaw | 4Mation | 19.00 |
| 1949c | Kid Pix | ESM | 34.00 |
| 5937b | Poster | 4Mation | 85.00 |
| 1095b | Presenter GTI | Lingenuity | 65.00 |
| 5492c | PrimeArt | Minerva | 68.00 |
| 0944c | Pro-Artisan 2 | Clares | 110.00 |
| 5509b | Render Bender II | Clares | 75.00 |
| 5472c | Revelation II | Longman | 74.00 |
| 5490c | Revelation ImagePro | Longman | 125.00 |
| 5938b | smArt | 4Mation | 50.00 |
| 1912b | SolidsRender | Silicon V | 78.00 |
| 1941b | SuperPlot | Silicon V | 24.80 |
| 5512c | Titler | Clares | 117.00 |
| 5940c | Vector | 4Mation | 75.00 |

SOFTWARE - INTEGRATED PACKAGES

| | | | |
|-------|-------------------|--------|--------|
| 0900c | Advance | Acorn | 88.00 |
| 5427b | DeskTop Office II | Mineva | 74.00 |
| 0901c | Pipedream 3 | Colton | 71.00 |
| 0990c | Pipedream 4 | Colton | 118.00 |

SOFTWARE - LANGUAGES/COMPILERS

| | | | |
|-------|------------------------|-----------|--------|
| 0938b | ABC III Basic Compiler | Oak | 78.00 |
| 0107c | C Dev. System | RISC Dev. | 77.39 |
| 1907b | Cambridge Pascal | OAK | 89.00 |
| 0946c | Desktop Assembler | Acorn | 118.00 |
| 0945c | Desktop C | Acorn | 178.00 |
| 0100b | Easy C | RISC Dev. | 49.00 |
| 0905c | Logo | Longman | 54.00 |
| 0895c | PC Emulator V1.8 | Acorn | 92.00 |
| 1906b | RiscBasic Compiler | Silicon V | 77.00 |
| 5428b | RiscForth | Silicon V | 77.00 |
| 1079b | Robo Logo | Silicon V | 38.00 |

SOFTWARE - MUSIC/SPEECH/SOUND

| | | | |
|-------|--------------------------|------------|--------|
| 5576b | ARCTiculate | 4th Dimens | 19.00 |
| 1091b | Armadeus | Clares | 58.00 |
| 5522b | Digital Symphony | Oregon | 39.00 |
| 1971b | MicroStudio | EMR | 66.00 |
| 0835b | Notalte | Longman | 42.00 |
| 5461c | Oak-Recorder II | Oak | 39.95 |
| 5486c | Rhapsody 3 | Clares | 77.00 |
| 1939b | Rhythm-Bed | Clares | 38.00 |
| 5523b | Serenade | Clares | 105.00 |
| 5457b | Sound Tracker | Leading Ed | 36.00 |
| 5519b | Speech Arch | Superior | 16.00 |
| 5439b | Voice Generator | MJD | 30.00 |
| 5513b | Vox Box | Clares | 45.50 |
| 5441e | ZY-Fi Stereo Speaker Sys | Zydec | 34.74 |

SOFTWARE - PRINTER DRIVERS

| | | | |
|-------|----------------------------|-----------|-------|
| 1966b | ESM Screenprint (Epson) | ESM | 37.37 |
| 1968b | ESM Screenprint (Star) | ESM | 40.00 |
| 5527a | Expression-PS | CC | 15.00 |
| 0095b | HP Deskjet Colour Driver | RISC Dev | 15.00 |
| 0090b | Star/Epson Colour Driver | RISC Dev | 15.00 |
| 1940b | SuperDump | Silicon V | 19.00 |
| 5503d | Turbo Driver - Colour | CC | 95.00 |
| 5505c | Turbo Driver - BJ Series | CC | 42.00 |
| 5508b | Turbo Driver - HP Deskjet | CC | 42.00 |
| 5511b | Turbo Driver - Epson Styls | CC | 42.00 |

SOFTWARE - SPREADSHEETS

| | | | |
|-------|-------------|-----------|--------|
| 0900c | Advance | Acorn | 88.00 |
| 0929c | Eureka v2 | Longman | 81.00 |
| 0901c | Pipedream 3 | Colton | 71.00 |
| 0990c | Pipedream 4 | Colton | 118.00 |
| 5455b | ProSHEET | Silicon V | 39.00 |
| 1903d | Resultz | Colton | 119.00 |
| 5487c | Schema 2 | Clares | 105.00 |

SOFTWARE - UTILITIES

| | | | |
|-------|--------------------------|------------|--------|
| 5446c | Almanac | Stallion | 57.00 |
| 0957b | Ancestry | Minerva | 58.00 |
| 1946b | ARC-DFS | Dabs P | 21.00 |
| 5913b | Chatter | 4Mation | 34.00 |
| 1106b | Compression | CC | 34.00 |
| 5456b | Disc Rescue | Look | 28.00 |
| 5109c | Disc Sharer | Soft Soln | 137.00 |
| 0094b | Hard Disc Companion II | RISC Dev | 45.00 |
| 5445b | Investigator II RISCOS 2 | Leading Ed | 21.00 |
| 1914c | Office Tools | Silicon V | 227.17 |
| 0895c | PC Emulator V1.8 | Acorn | 92.00 |
| 0097b | PlayBack | RISC Dev | 19.00 |
| 1943c | Primemover | Minerva | 75.00 |
| 1923b | ProCopier | CIS | 5.00 |
| 5939b | Snippet | 4Mation | 32.00 |
| PWPTb | Wimp Programmers Toolkit | RISC Dev | 16.98 |

SOFTWARE - WORD PRO. & EDITORS

| | | | |
|-------|--------------------------|----------|--------|
| 0899c | 1st Word + Version 2 | Acorn | 73.95 |
| 5917b | DBEdit | 4mation | 28.00 |
| PDE2b | DeskEdit 2 | RISC Dev | 27.19 |
| 5427b | DeskTop Office II | Minerva | 74.00 |
| 1170b | Easiword II | Minerva | 44.00 |
| 5551b | Easiwriter Dict. French | Icon | 26.00 |
| 5552b | Easiwriter Dict. German | Icon | 30.00 |
| 5553b | Easiwriter Dict. Spanish | Icon | 30.00 |
| 5507c | EasiWriter III | Icon | 132.00 |
| 1947b | Pendown Plus | Longman | 67.00 |
| 1959b | Pendown v2 | Longman | 45.00 |
| PGLTb | PolyGlot | RISC Dev | 16.98 |
| 5495b | Primeword | Minerva | 53.00 |
| 1933c | Startwrite | Icon | 55.00 |
| 5453b | StrongEd | Stallion | 22.00 |
| 1934c | Talking Pendown | Longman | 57.00 |
| 1918c | Tech Writer | Icon | 158.00 |
| 0940b | WordWise Plus Arch Disc | CC | 29.00 |
| 1902c | Wordz | Colton | 88.00 |

VIDEO DIGITISERS/GENLOCK

| | | | |
|-------|--------------------------|-----------|--------|
| 1926g | A3000 Colour Digitiser | Pineapple | 235.00 |
| 5843g | Chroma Genlock CG1-A3000 | Wild Vis | 215.00 |
| 5842g | Chroma Genlock CG2-Arch | Wild Vis | 215.00 |
| 5590e | Digitiser Colour | HCCS | 79.00 |
| 5591e | Digitiser Colour-A3000 | HCCS | 79.00 |
| 5594g | Grevhawk | Wild Vis | 97.00 |
| 0877g | Hawk V9 MkII (Dithered) | Wild Vis | 269.00 |
| 0878g | Hawk V9 MkII (Standard) | Wild Vis | 199.00 |
| 1958g | ScanLight Video - A5000 | CC | 218.00 |
| 5589e | VIDI Digitiser Col-A3000 | Rombo | 72.00 |
| 5588e | VIDI Digitiser Col-Arch | Rombo | 72.00 |

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Controls for the game are as follows:

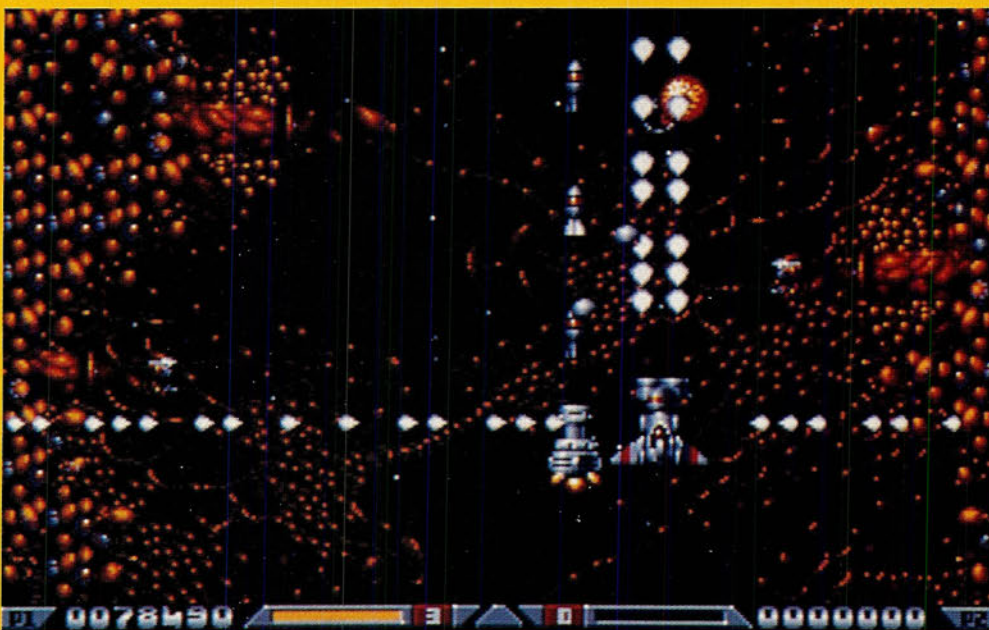
Z Left
X Right
' Up
/ Down
RETURN Fire
P Pause (on/off)

How to play

When you run the game it installs itself on the iconbar: click on the *Xenon II* icon to and you see a swirl of stars.

Press RETURN to move to Options. Move the arrows up and down using the Up and Down keys; to play the game, move to '1 Player Game' and press RETURN.

The object of the game is simple: blow the hell out of everything you see, collect power-ups, and buy equipment



Blasting the hell out of everything and everyone in sight with Xenon 2

for your ship so those boys are too scared even to talk to your mother-in-law.

The first items you want are the speed-up pills so you can race after the enemy. The first two pills move across the screen from left to right: shoot them to turn them into spinning spheres marked with an 'S'.

Other items turn into spinning spheres branded with a 'C': these are credits, and picking them up will give you money to spend on your ship.

When you enter the shop, you have the option to sell weapons to gain credits. If you do not wish to sell anything

Running notes

If you have a 2Mb machine then the demo will run from floppy without a problem. However, if you have 1Mb of Ram, then you must decompress the game before running it. To do this, run this option to open the directory viewer as described below, and drag the *Xenon2* application to another disc. Then reset your machine, and run the application from the new disc without mounting any other discs beforehand.

If you have a 1Mb machine with Risc OS 3 (such as an A3010) you must reduce the font cache down to zero to allow the demo to run. Do this by using the Task Manager: click with Select on the Acorn icon on the iconbar and drag the bar marked 'Font cache' to zero. Finally, you must make sure the desktop is in Mode 12 before running.

use the control keys to move the yellow cursor to 'EXIT', then hit RETURN. If you want to sell, move the cursor to 'SELL' and press RETURN.

To sell a particular piece of equipment, move the cursor over the item to sell and press

RETURN. To finish, 'EXIT'.

After this a selection of extras appears if you have enough money. Use the yellow cursor and RETURN to select the item you want and press RETURN twice to buy. See page 75 for a full review.



COVER DISC

and the latest in graphics techniques: it's all on the Acorn User cover disc

OMNIDESK Part one of our flexible friend

Omnidesk is the ultimate flexible desktop application. If you've ever wished you had a collection of some of your most useful desktop utilities rolled into one application, *Omnidesk* is straight-forward to operate. *Omnidesk* at present provides five basic utilities. Every

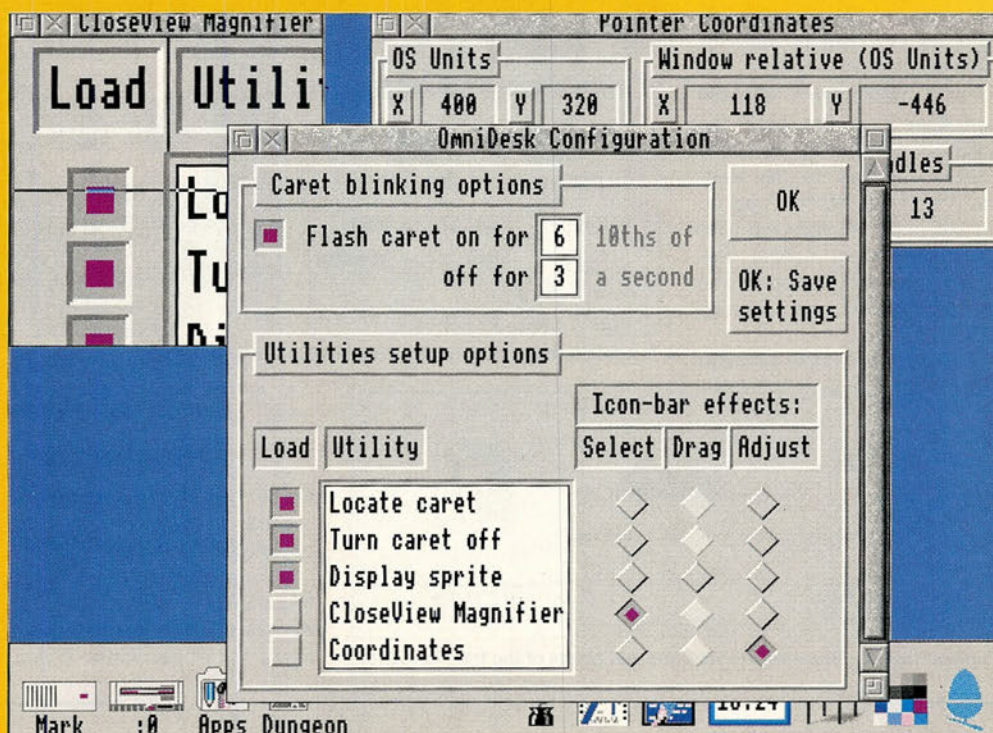
month we'll provide extra utilities. Looking at the configuration window, you will notice that the top area is labelled

Caret blinking options. This utility will flash the caret at a user-defined rate. Simply enter the on and off periods in tenths of a second and make sure the switch at the left is selected.

A 'hidden' utility provided by *Omnidesk* is the ability to use the cursor keys to move the pointer. The cursor keys move the pointer in steps of one pixel for fine positioning, while pressing SHIFT, CTRL or CTRL-SHIFT at the same time will increase the speed.

Locate caret will bring the window containing the caret to the front, and the pointer will zoom towards the caret. If the caret is not present, the computer will beep.

Choosing *Display sprite* from the Utilities menu will open a small window. Dragging sprite files to it will display the sprites on the



The omnipotent, omniscient, and you'll soon find omnipresent, *Omnidesk*

screen, which is useful for previewing artwork or taking screen shots. Click the mouse or press a key to return to the desktop. *Omnidesk* can also cope with Clares' Xarc file format.

Choosing the *Turn caret off* utility has the very simple effect of removing the caret. This provides an easy means of making sure *Omnidesk* can detect the cursor keys for moving the pointer.

OMNIDESK

The ultimate flexible desktop application

Extra utilities

The prime feature of *Omnidesk* is its ability to be extended by other utilities which all have a common presentation. If you double-click on the *Omnidesk* icon with SHIFT held down, you see it contains a further directory: Utilities. You run these utilities independently of *Omnidesk* by double-clicking on them: if you do so, they will install their icons on the iconbar as normal, and will not be affected by *Omnidesk* in any way. Each application has its own help files containing instructions. *Omnidesk* utilities all have similar presentations: from their main windows, there will always be a menu which presents at least three options: Info, Window position and Save settings.

There may well be other options too. Info accesses the usual information window, while the Window position leads to a window which lets you determine where a utility's window appears onscreen. The other option, Save settings, saves the location of the window to disc for subsequent use. All the utilities support interactive help. For complete instructions, look at the file !Omnidesk.Docs.ReadMe.

MORPHEUS

Bridging the picture gap

Morpheus is the first commercial morphing package available for the Archimedes, and this demo version from Oregan shows why it seems destined to be a hit (see the review on page 56).

Morphing is the act of taking one picture and changing it into another: our very own morphing package from the August issue proved very popular indeed.

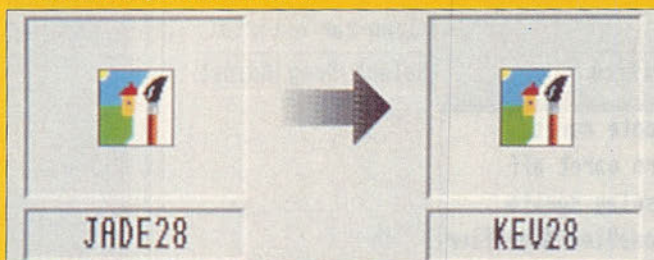
In the last couple of years the process has been used to devastating effect in Arnie's *Terminator 2* and in loads of pop promos and TV ads.

For a quick demo of what *Morpheus* can do, load the application and drag the Uffe-brooke directory to the icon-bar. Two windows will appear, the left-hand one showing Uffe Ellemann-Jensen, former foreign secretary of Denmark, and the right-hand one showing Brooke Shields.

To create a preview frame of



A subtle transformation from Jade to Kevin using Morpheus



These sprites are the respective start and end points of the transformation

the morph from one to the other, click on the 'single square' toolbox icon, which opens up a window. Click on the *Morph* icon and after a few seconds a window pops up containing the morph.

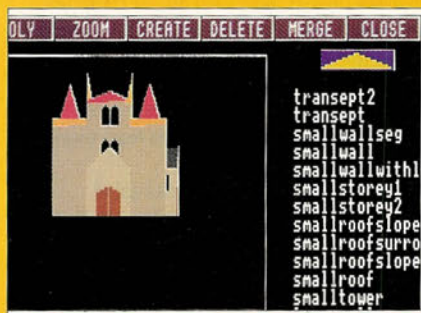
If you want to view an intermediate stage on the morph, click on the radio icon to the left of the Frame # icon,

and set the number to between one and ten: one is Uffe, and ten is Brooke. Five is, for want of a better word, UffeBrooke.

The demo is complete in most areas, though you cannot save sprites or movies. Full instructions are provided on disc, along with the example described above. Hope you enjoy it.

3D Graphics

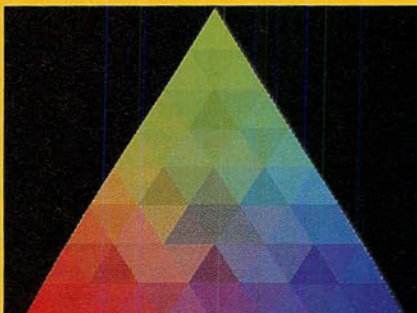
This final instalment of our long-running and popular 3D Graphics series culminates in a complete editor for 3D objects, which can be displayed using the *BAU3D* module.



The last part of our 3D programming series

*Info

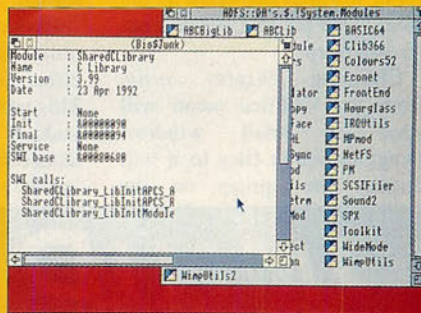
What do the following have in common: wacky graphics demos, screen fades, directory setters and the secrets of the Shared C Library? *INFO, of course, and all the programs are on the disc.



*Info: the pages with something for everyone

Bio

Life continues to thrive with the latest instalment of *Bio*, our totally flexible desktop application. Sprite merging and module information are on the menu this month, for your delectation.



Another addition to the ever-growing Bio



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Harness the Power of Desktop Basic and C with DeskEdit 2

DeskEdit 2 is an exceptionally powerful desktop editor for Basic programs and C source code - but it is also very easy to use.

- ◆ Just open a window and type in your program. Press F3 to save it at any time. Press Ctrl-Shift-F3 and your Basic program will be saved and run interactively from within the Desktop - and if the name of the program is !RunImage then DeskEdit will run the parent application - Magic!
- ◆ If you are using line numbers, these are automatically handled for you.
- ◆ All Basic's abbreviations are automatically implemented.
- ◆ DeskEdit provides all the search and replace options of Edit plus some very special ones: DeskEdit's QuickSearch can take its target from any marked text (to avoid typing), and you can specify that it will only find matches in PROC and FN definitions.

Archimedes World's feature on programming editors (August 1993) says of DeskEdit 2:

"With so many features this is an excellent choice of editor for anyone who programs. . . . The whole feel of this product is one of utter professionalism."
and it's review of DeskEdit 2 (February 1993) awarded a maximum score of 5 out of 5 in all four of its categories - **performance, features, value for money, overall.**

- ◆ Special Browsers instantly build up scrollable lists of all defined procedures and functions.
- ◆ DeskEdit contains more than 100 special key combinations.
- ◆ A fully customisable Basic Indenter will format selected portions of your program.
- ◆ An Undo feature lets you Undo and Redo your editing, and this together with all markers and many other features is optionally saved to disc when you save a program.
- ◆ A customisable Help facility gives syntax Help on all Basic key words. A Caret info feature gives information about the character at the caret; and a file information feature gives you information on any file dragged to DeskEdit's icon when Alt is pressed.
- ◆ There are numerous markers and position finder features which make scrolling through your program to find a particular line a thing of the past.
- ◆ Plus Backup saves, special delete and tabbing options, a programmer's calculator which can import and export data, a flexible clipboard, powerful printout features, fully customisable user commands, powerful macros etc.



Moreover, DeskEdit is just as at-home with text (for editing Obey files, writing letters, or complete books), and with the C language, providing most of the features offered to Basic users (where applicable) with others added - including a syntax checker.

DeskEdit comes with:

- fully illustrated 70 page manual (with index)
- function keystrip
- smart quick reference card
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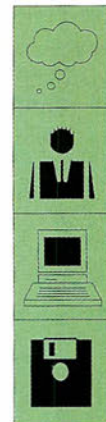
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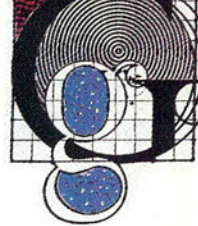


PHOTO CD LATEST DEVELOPMENTS

PHOTO CD is Acorn's development of a technology conceived by the film manufacturers, Kodak. Each CD, which requires single or multisession-compatible CD-Rom drives, provides a large number of images with a four-level magnification facility.

But unlike zooming into a sprite as in *Paint*, the magnified images will retain their full resolution and quality. This has been made possible by storing picture files containing the 'base' together with images of 2x, 4x, 8x, and 16x the resolution of the original.

On magnifying part of the base by, for instance, the x4 magnification, the appropriate part of the 'base x4' image will be loaded from the CD-Rom.

There are advantages to storing versions of the same image, rather than one high resolution image. First, zooming out of high-resolution sprites causes deterioration of image quality; also, if there is a variety of resolutions available you have the choice of working with a low-res image to save memory space.

The resolutions begin at 128 x 192, for the base, to 2048 x



Acorn's ship comes in with Photo CD

3072 for base x16. Each image file, will be 25Mb in size, and with 100 of these crammed onto each CD, there will be an effective 2.5Gb of data per disc, thanks to Kodak's YCC compression system. Because of their highly-squashed state, the decompression times of images are likely to be slow.

Acorn will supply a new version of *ChangeFSI* to convert YCCs into sprites but until Risc OS can display 24-bit colour, the full potential of Photo-CD will remain unseen.

Those with graphics cards which support 15- and 16-bit colour, can view pictures outside the desktop.

Professional DTP and the interactive games market look like two probable destinations for this new technology. But, as yet, Photo CD is more of a foundation upon which third parties are expected to build, with the developers toolkit available from Acorn at probably the same price as similar packages for the Mac and PC: £400-500.

In brief

In-4Mation

4Mation has released a program called *Hatchback*, which will enable *Draw* objects to be filled with a choice of nine patterns (or chloropleths) including dots, lines, hatches and dashes.

The fill style can be edited in terms of angle and density to achieve the desired effect.

This will be good news both for those with monotone printers and for Cad designers, who will reap the benefits of custom monotone patterning.

What's the point?

The Floating Point Accelerator has finally arrived, but do increased SI benchmarks and megaflops actually mean anything to graphics users?

The chip takes the burden of floating-point maths routines off the Arm, and, acting in parallel, increases speed performance in mathematically-intensive tasks such as are commonly set by graphics programs.

Can hour-long renderings be reduced to minutes? Are the days of endless waiting for *Draw* to redraw over?

Although future graphics packages will most certainly take advantage of the FPA, the full review on page 63 looks in detail at who or what will benefit at present, from this new, number-crunching co-processor.

Power up

Iota software has announced that the latest version of its database program, *Datpower*, will accept *Artworks* files.

This makes *Datpower* compatible with all the standardised graphics formats – sprites, *Draw* files and *Artworks*, enabling fully-comprehensive graphics databases to be compiled. (For a full update on what the package has to offer, see the *Datpower* article on page 59 of this issue.)

ProArtisan hold-up

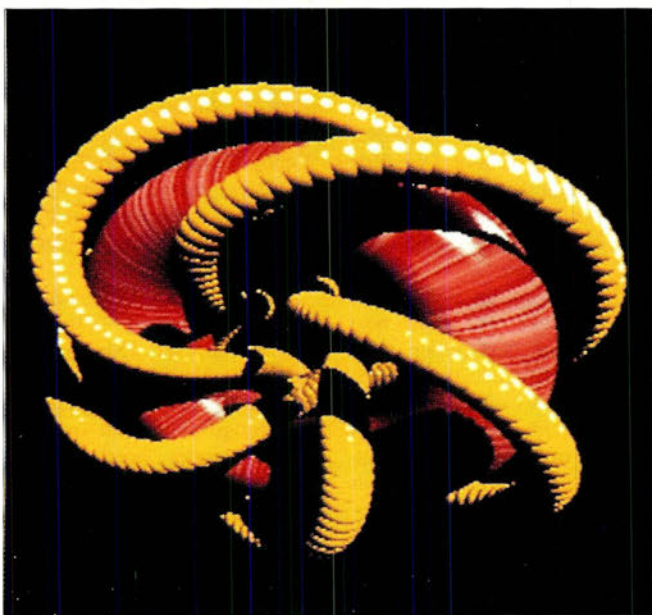
We must apologise for the absence of the *ProArtisan 2* review from this issue due to delays in producing the finished user manual.

PRIZE PICTURE GOES DUTCH

THIS month's prize pic originates from Holland and is the work of P Gosselink. He has demonstrated not only mathematical skill but also artistic talent in creating this beautiful geometric form.

Based on the structures as described in a *Scientific American* article (Jan '91) the 3D sculpture bears a strong resemblance to those in the award-winning animations of William Latham, IBM, focussing on the integration of pure maths with art.

The structure was generated in a custom *Basic* program, which wrote a description file for the PD raytracer, *QRT*. If you wish to submit a picture, please send details of the methods you used along with your images.



A demonstration of the integration of pure maths and art (it says here)



PC NETWORK POWER FOR THE ARC

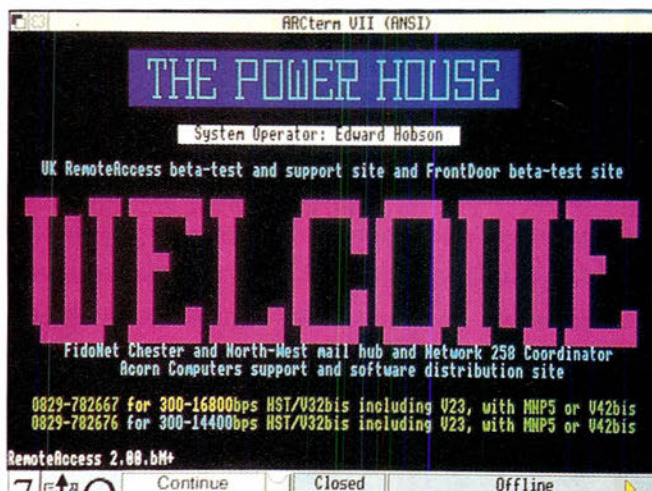
THE Power House BBS is run by Edward Hobson from Malpas in Cheshire.

Edward's PC-based BBS runs *FrontDoor* and *RemoteAccess* BBS software on a multi-tasking 386DX machine, with 405Mb of storage, and two lines connected to US Robotics Courier modems. No subscription is required, but user contributions in the form of hardware, software or finance are always acceptable.

Although running on an IBM PC, Power House offers considerable support to Archimedes and Acorn users, with a good selection of file download areas ranging from Desktop applications to PocketBook utilities. It's a pity Acorn has lost interest in the Acorn Support BBS scheme, of which TPH was a part, as dealer support in some areas has become very sparse, particularly in Scotland.

The Power House PC file areas cover a wide range too, with an emphasis on BBS and mailer software. TPH has just been appointed a beta-test site for *RemoteAccess* BBS software, and features support message conferences for this and a number of other PC BBS software packages.

Unusual features to be found on The Power House include a



The Power House extends a welcome

section of online Ansi music demonstrations for those lucky enough to have music capability built in to their terminal software. The Entertainment also offers online games such as *Tetris*, a trivia game, drag racing and ping-pong.

Hydra is a new bi-directional protocol that allows simultaneous uploading and downloading of files with a built-in chat mode. *Hydra* has been ported to run on Acorn 32-bit machines and Edward has tested and used it, so an evaluation version is available from the Acorn file areas on The Power House.

FidoNet, ChatNet and

MetroNet netmail and echo-mail message conferences are available to all users. There are around 200 conferences covering a wide range of topics, read and written by people all over the world. Subjects as varied as Open University, Sound-Blaster and US Robotics modem support are available for discussion – Edward himself is a mine of information on USR modems.

The Power House is online 24 hours on 0829 782667 for calls up to 16k8 HST, and on 0829 782676 at speeds up to 14400bps, both lines supporting V23 (1200/75bps) and MNP5/V42bis compression.

In brief

Born Borg

Wales has a new, up-and-coming BBS called The Borg. Run by SysOp Craig Senior, the BBS is located in Newport, Gwent, is online 24 hours and supports all speeds up to 16K8bps HST. The system runs ARCbbs software on an A5000 machine. Craig's plans for The Borg feature messaging with 40 to 50 Echomail areas, and includes a massive online storage capacity of over 1Gb of downloads for Acorn users. The current size of the filebase is already over 100Mb. Try out The Borg by calling 0633 897182 - 8N1.

Plasma new blood

Almost everyone who has logged on to an Acorn BBS in the FidoNet network will have seen the name Binkley in the opening dialogue. This is the network mailer interface program ported from IBM PCs to Acorn 32-bit machines. Keith Hall, SysOp of the Plasma Sphere BBS, has been working hard to bring the conversion up to date. The Plasma Sphere BBS, known as "The Home of Arc-Binkley" is now in danger of closing unless new registered users (or donations) enable him to carry on the good work. Call the Plasma Sphere soon for details on 0925 757920 (8N1 - 16K8).

Forum for you

Another new Acorn BBS pops up in Scotland called ArcForum. Online between 10pm and 8am, Graham Cant's ARCbbs based system is in Livingston, West Lothian. ArcForum BBS runs on an A5000 machine and supports V22, V22bis and V32 (1200/2400/9600bps). You'll find all the Archimedes and Acorn interest message echoes available on ArcForum, as well as a growing Acorn filebase. ArcForum is open for discussion on 0506 39590.

Call me

You can contact me by writing to: David Dade, Acorn User, 101 Bayham Street, London NW1 0AG or by Email to: DavidD@arcade.demon.co.uk, or by MODEM on Arcade BBS, User #2 - 081 654 2212 or 081 655 4412.

SLIPPING IN AND OUT OF THE NET

UNTIL recently, BBS operators wanting to become part of the Fido Network applied for Node status to the Net Host system of their choice, usually one that was geographically close, to keep call costs down.

Because some nets had a better reputation than others for managing their affairs and in the treatment of the systems of which they were hosts, BBS operators tended to be more influenced by these factors when choosing their host. As a result some nets contained systems with a wide geographic spread.

After a great deal of acrimonious discussion and

disagreement between BBS operators and the FidoNet coordinators about whether any changes were necessary, the re-organisation of FidoNet nets into a mostly-geographic basis has begun.

This has meant many BBS systems have had their host system and net and/or node numbers changed. Many operators did not want to be moved for the reasons above, or because of the upheaval in network mail linkages that has inevitably followed.

Several of the well-known Acorn BBS systems that have been mentioned on this page in the past have or will have new FidoNet addresses. StarNet

BBS in Norwich, home of the UK Educational message Echoes and MicroFido – FidoNet on a floppy for Schools – has been moved into the new East Anglia Net to become 2:2501/405.0.

The Digital Databank in Welwyn Garden City, at present in Net 254, may be moved to Net 257.

These new geographical groupings are based on telephone code areas, which themselves may not numerically represent adjacent areas.

When OfTel's planned personal numbering is introduced in a few years time, yet another system will have to be found, meaning all-change again.



COLOURJET Series 2

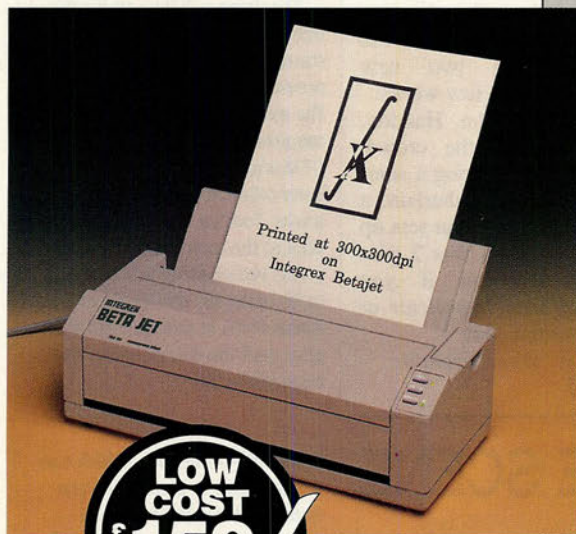
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FRACTALLY EVERYTHING

FRACTAL by Mike Curnow of the Archimedes Fractal Group is one of the most comprehensive fractal creation programs on the Arc. There are 23 functions, to plot anything from Mandelbrot and Julia to plasma and Henon maps.

The program uses a clever method of drawing in fractals so you see the image when it's only partially created.

Full control over palette and plot mode is via the Risc OS menus or toolbar, and support is given to the interactive help facility. A program that does just about anything.

Fractal is available from Datastream - CH008



Anything from the simplest to the most complex fractal creation

CZECH THIS ONE OUT

QUITE a few new PD games have been released in the last month. *Balvanic* is a mini arcade game from Slovakia.

Based on the *Repton* concept, you guide Balvanic around a maze of earth and walls, avoiding falling rocks

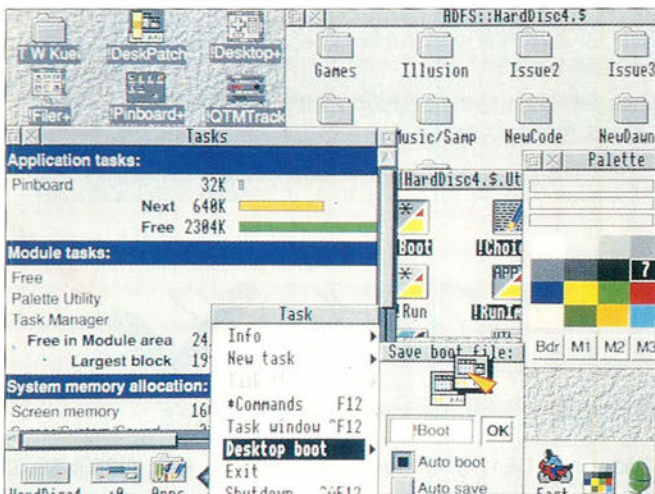
and collecting crystals. There's plenty of interest on each level due to the large number of added features like water and various monsters. Keyboard response is poor, but, overall, worth having.

From Datafile - Games 36

DIY YOUR DESKTOP

CODER Ting Kuei has been responsible for several OS3 desktop patch programs, which generally improve the look of the desktop. The best of these, *Deskpatch*, uses features like icon slabbing in, solid icon dragging and anti-aliased text

in windows, and is well worth adding to your bootup sequence. The only snag occurs if you have to use the desktop in low res modes, where the text looks a bit naff. *Deskpatch is from Datafile - Utilities 87*



Deskpatch can be added to your bootup sequence

IN FLIGHT

THE Flight Simulator Toolkit by SIMIS has produced a profusion of simulators on the PD scene including two new releases in the last few weeks.

Spitfire, by John Haddon, stands out from the crowd. After an intro featuring a sample of Neville Chamberlain, a mouse-controlled menu sets up a variety of World War 2 missions. Tricky, but if you enjoyed playing *Interdictor* or *Mig 29*, worth a look.

Spitfire is from Datafile - Games 35

THE SCENE

THIS month's demo scene is pretty quiet, with most groups working hard on their latest productions to get them finished for the October show.

As far as I know, Armaxess, New Age, Bytepool, Arm's Tech and BASS will all be there as well as my own group Quantum. So there should be plenty of things happening on the scene, and, if you want to get in on the action or hand over any progs for review, ask for me at the *Acorn User* stand or find me in a Redskins cap in the crowd. Watch out for a full report on all the new PD releases at the World of Acorn show, on this page.

In brief

New Age

Coding team Adam Toon and Andrew Neville who make up New Age, have a demo under production which should be released soon. A preview of the four-track music demo revealed a CD player-type music control section accessing a demo for each track. A clever routine in the intro checks if multisync modes are available and, if not, a screen swapping emulator is used to allow hi-res graphics to be viewed.

Armaxess demo

More news from Armaxess coder Thomas Alber reveals that the current demo under production (mentioned in the August *Acorn User*) will be extended to two discs packed with music, fx and graphics.

The demo will be a co-production with Ace of Arc Angels, who starred in the scrollers of previous 'axess demos.

The extra length of the demo requires even more music, so QTM and LSD musician EXEL has been called in to create new tracks. Tom's a bit pressed for time at the moment, with work on his vector game which needs to be ready for the World of Acorn show in October. But if all goes well the demo should also be ready in time.

Byte back

Bytepool Productions, which currently seems to be running the German scene, has two new demos on the cards, the first of which will be called *Euphoria*. Zach tells me that *Euphoria* will feature plenty of new fx including a texture-mapped scroller with music by BPP's new musician, Avatar.

Bit back

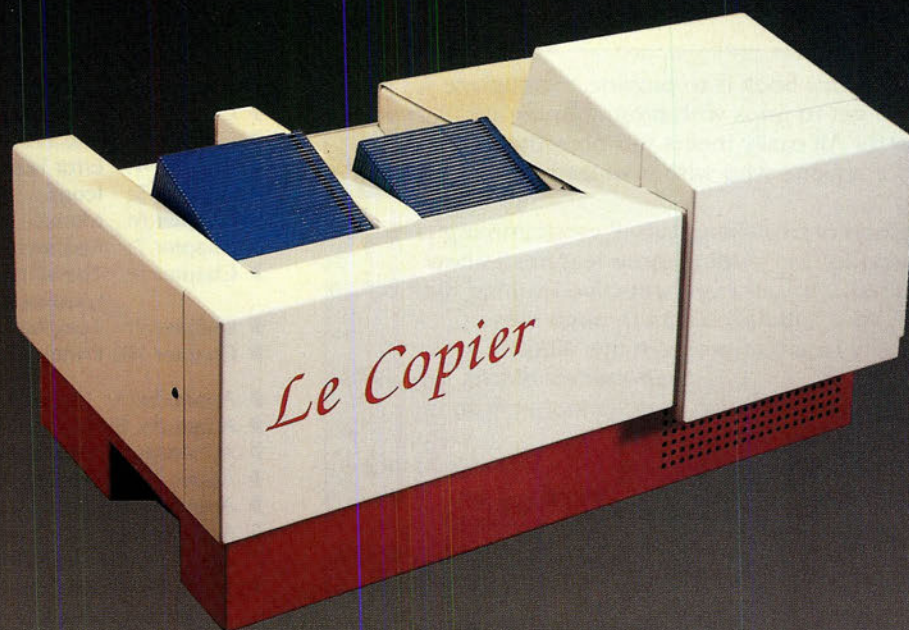
Beeb users will be glad to know that Eight Bit Software is still alive and kicking, having been taken over by Chris Richardson. Anyone interested in joining the 8BS user group or obtaining the latest catalogue should send an SAE to:

Chris Richardson, 8BS, 17 Lambert Park Road, Hedon, Hull, East Yorks. HU12 8HF.

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Wimp Programming for All on Acorn RISC Computers

by Lee Calcraft and Alan Wrigley

**Reprinted with
revisions for
RISC OS 3**

This book provides programmers with a complete introduction to all the principal techniques involved in writing multi-tasking Wimp programs to run within the RISC OS Desktop environment. No prior knowledge of the Wimp is assumed and the tutorial style of the book will enable all programmers to understand the concepts involved and to develop their skills in writing high quality programs within the Desktop environment.

...The declared aim of this book is to provide "a complete solution for those who wish to get to grips with programming the Wimp". Wimp Programming for All easily meets this objective and is an excellent purchase for anyone who wishes to learn how to write WIMP applications...

...The author's method of explaining WIMP programming is to build up a working application, adding more features as new techniques are acquired... This is a very effective learning method and the programmer who faithfully works through these applications will certainly learn to program the WIMP.

Archimedes World, July 1993

...The 192 pages are crammed with useful info that in some places goes into considerable detail...

...The authors not only tell the reader 'how to' but give guidance on how to do things efficiently - not all the same thing!

... The RISC Developments book is more comprehensive...

Acorn User, July 1993

Wimp Programming for All is proving to be the definitive book on this subject for all users of Acorn RISC computers. Only 9 months after its launch the book has already been revised and reprinted.

The book consists of ten main chapters and a number of appendices:

- Chapter 1: Introducing the Wimp
- Chapter 2: Windows
- Chapter 3: The Wimp Poll Loop
- Chapter 4: Error Handling
- Chapter 5: Icons
- Chapter 6: Menus
- Chapter 7: Redrawing Windows
- Chapter 8: The Wimp Message System, Loading and Saving Data
- Chapter 9: Templates
- Chapter 10: Printer Drivers and Outline Fonts
- Appendix A: Indirection Operators
- Appendix B: Using RISC OS 3
- Appendix C: Application Resources
- Appendix D: Setting up a sprite area
- Appendix E: SWI calls described in this book
- Appendix F: Associated Disc
- Appendix G: The Wimp Programmer's Toolkit
- Appendix H: DeskEdit

SPECIAL OFFER - ONLY WHILE STOCKS LAST!

We have a limited number of the first printing still available at the special price of £6.95 (£7.95 with Disc).

To support the book there is a disc containing all the programs (at different stages of development) as listed within the book, together with additional supporting applications. All example programs are given in BBC Basic.

**New
version**

Wimp Programmer's Toolkit V. 3

an essential aid to any programmer - now upgraded with five new powerful utilities

FOUR NEW APPLICATIONS:

- ◆ **BASIC PROCEDURE AND FUNCTION ANALISER**
- ◆ **POLLMASK** - generates Wimp poll mask numbers.
- ◆ **FLAGS** - allows you to calculate Icon, Window and Menu flags.
- ◆ **BASIC VARIABLE LISTER** - lists all variables (including arrays), procedures and functions used in a program.

PLUS THE INVALUABLE:

- ◆ **RISC USER WIMP LIBRARY** of Wimp applications and procedures.

IN ADDITION TO:

- ◆ **WIMP DEBUGGER** allows you to debug Wimp-based programs while testing and running them.
- ◆ **EASYWIMP** provides a ready-made Wimp application shell to be used for the creation of single-window applications.

- ◆ **FORMED** - the latest version (V 1.26) of Acorn's Template Editor for designing windows and icons.
- ◆ **ICONBAR SHELL GENERATOR** allows you to build simple multi-tasking programs by creating a shell.
- ◆ **DESKTOP FILE LOADER** allows you to load a program from the Desktop, rather than run it.
- ◆ **MENU EDITOR** - allows you to create and edit Wimp menu structures for use in your own programs.
- ◆ **WIMP MESSAGE MONITOR** provides a means of monitoring the Wimp polling system.
- ◆ **SPYGLASS** - displays the contents of memory allocated to any task currently running.
- ◆ **TEMPLATE FILE BROWSER** allows you to view the contents of a template file.
- ◆ **WIMPAID** allows pointer, window and icon parameters to be dynamically displayed on screen.

| | | | | | |
|-------|--|-------|---|---|-------|
| BK12b | Wimp Programming for All book | 12.95 | PWK3b | Wimp Programmer's Toolkit V. 3 and manual | 21.95 |
| BK13b | Wimp Programming for All disc | 4.95 | PWKUb | Wimp Programmer's Toolkit V.3 Upgrade | 7.95 |
| BKX2b | Wimp Programming for All book (offer) | 6.95 | <i>All prices are inc VAT.</i> | | |
| BKX1b | Wimp Programming for All book and disc (offer) | 7.95 | <i>Please add £2 p&p in each case (£3 for Europe, £5.50 elsewhere).</i> | | |

RISC Developments, 117 Hatfield Road, St Albans, Herts AL1 4JS. Tel 0727 840303 Fax 0727 860263



SHERSTON MARKS END OF ERA

ALL good things must come to an end, and with the publication of *Teddy Bears' Rainy Day*, Sherston Software marks the conclusion of its association with the BBC micro.

A major force in the Beeb market for years, Bill Bonham, Sherston's MD, admits 'It's really quite sad,' especially as the company built its business and reputation on the machine. Sherston will now devote its time to producing educational programs solely for the Archimedes machines.

With *Teddy Bears' Rainy Day*, Sherston goes out on a high note as we meet those furry friends from *Teddy Bears' Picnic* again. This time there are five different games for five to seven-year-olds which can be played in sequence or individually.

Longman Logotron continues to produce packages for this format, to accompany the *Look and Read* educational TV programmes. The latest is *Earthwarp*, an adventure with an environmental theme which



Those furry friends are out in force for the last time

incorporates language and maths, plus logical puzzles. BBC *Earthwarp* costs £22 and the Archimedes version, due in January 1994 will be £24, both plus VAT. *Teddy Bears' Rainy Day* is £26.95 plus VAT.

Sherston also has two other new packages – an adventure game called *Aztecs* and *Naughty Stories: Volume 2* (six

titles in fact) featuring new characters such as Gordon's Groovy Granny and Derek's Dopey Dinosaur.

Aztecs is priced at £39.95 plus VAT and the *Naughty Stories* are £9.95 each or £49.75 for the lot.

Sherston is on (0666) 840433. Longman Logotron is on (0223) 425558.

LOGOS FIGHTS ON

THE North Yorkshire Trading Standards Department has dismissed the complaint from Logos, the Logo User Group run by Mike Doyle, that Topologika's *ScreenTurtle* and Sherston's *Crystal Logo* are 'neither Logo nor a good introduction to it'.

Logos was attempting to prove that the educational computer language *Logo*, and what is commonly known as 'turtle graphics', are not the same thing.

When the argument is explained, most people would agree, but the two terms are used interchangeably in the classroom in an attempt to teach problem-solving and spatial awareness, rather than programming.

The Trading Standards Department noted 'there seems to be a general acceptance in the trade that the use of turtle graphics is equivalent to Logo,' so found no grounds for prosecuting the companies.

If there is confusion it is in part due to the National Curriculum orders for maths and IT which use the two as equivalents. Logos, however, is not going to let this matter rest, and has submitted a draft circular to John Patten, clarifying the meaning of the two terms.

If you have something to add to this debate, you can contact Logos at PO Box 43, Houghton-on-the-Hill, Leicestershire LE7 9GX.

THE FUN OF THE FAIR

TEACHERS, and parents in the South West can see the latest educational IT at a Software Fair, to be held in September near Weymouth.

A number of major software publishers have been invited to participate in the show and the Dorset IT advisory team will be available to discuss the use

of computers in the county's schools, particularly the work to encourage cross-curricular use of IT.

The fair is free and takes place on 17 and 18 September at Superchoice Centre in Osmington Bay.

Further information on (0929) 405059.

PRIZE FOR SCHOOLS

THE National Council for Educational Technology has launched an important new multimedia competition for schools.

The National Educational Multimedia Awards (NEMA) are open to pupils under 19 and to student teachers, who are invited to submit resource collections or multimedia compositions.

Presentations can mix text, graphics, motion video, animation and photographic images and entries can be produced using Arc authoring packages such as *Genesis* and *Magpie*.

Sixteen prizes will be awarded, including a number sponsored by industry.

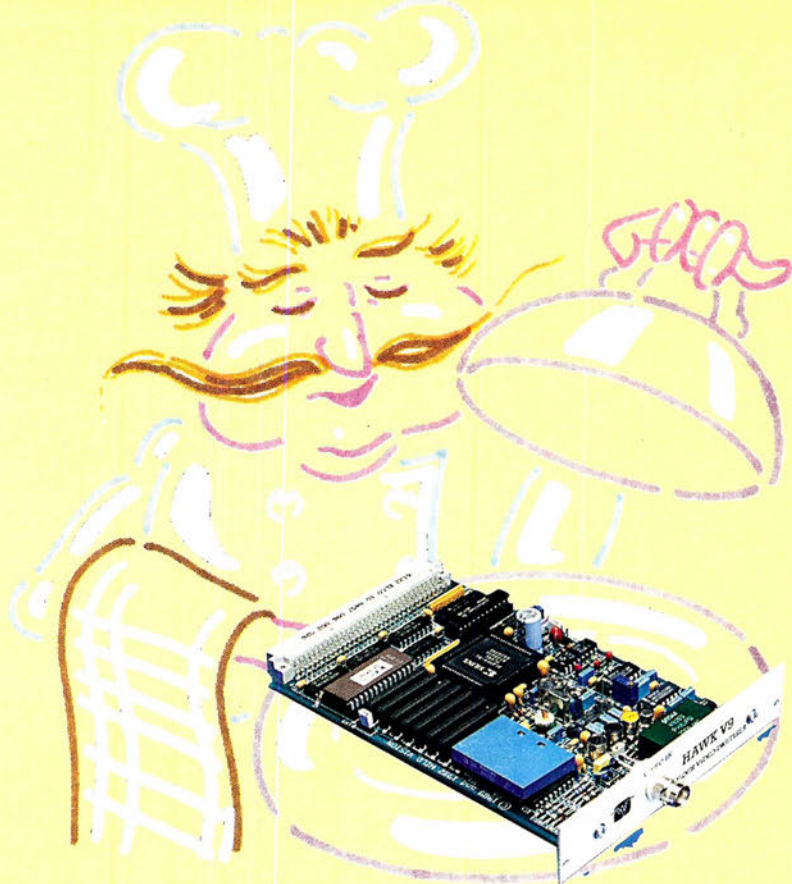
For details and an entry form, write to The NEMA Office, NCET, Sir William Lyons Road, Coventry CV4 7EZ.



Your chance to get hands-on experience of IT

WE NEED INPUT

ACORN USER is planning a series of articles about how Acorn computers are being used to integrate IT into core and foundation National Curriculum subjects. If you feel the work your school is doing is worthy of wider publicity, we would love to hear from you, so please contact the magazine at the usual address with details.



Half the fat, but twice the flavour!

Hawk V9 *MkII*

Hungry for a video digitiser? Now, the Hawk V9 MkII is what you'd call quite tasty. Deliciously clear digitised video live in a desktop window, almost like TV. Mmm mmm, the cream bun of digitisers, with only half the calories! We've slimmed the Hawk V9 MkII down to single width, giving you the space for further expansion card consumption. (We could name a few tempting morsels...).

These new ingredients are added to a successful digitising recipe. The Hawk V9 with its !FastGrab software was one of the first names to become really established as a quality digitiser for the Arc. We're simply in the process of putting the icing on the cake.

Recipe and instructions

The live video display is dithered in hardware, thanks to the latest programmable gate array technology (such as you'd find in Computer Concepts' LaserDirect and Scan-Light cards). Grabbing a sprite, either to save or drag directly into another multi-tasking package couldn't be easier. Because the images are enhanced before reaching the screen, it is possible to simply point, click and save. Of course, the image manipulation routine ChangeFSI is still included if you wish to mould your image further. The whole process is fast, friendly and flexible.

And just to whet your appetite, we promise that the price won't make you throw up (although it might sicken a few competitors!).



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Go on, Tuck in!



In a competitive publishing market, how does the Arc fare? Graham Bell looks at the current situation, and offers some tips to improve your DTP output

Get a good **press**

Desktop publishing isn't publishing. It covers only a part of the process – page make-up. But an amazing range of products are DTP'd: most of the thousand-or-so newspapers and bookstand magazines that you see in WH Smith for a start. Then there are corporate publications like brochures, leaflets and advertisements, plus amateur publications – school newspapers, parish magazines, and the like. Plus books and and publications like manuals.

Basic principles

The Archimedes is generally seen as a machine well-suited to desktop publishing. Risc OS certainly has the credentials. Its multi-tasking and drag-and-drop file handling work well. The outline font system is simple from a user's viewpoint: to install a new font, you drag it

into your Fonts folder. In contrast, both Macs and PCs generally use separate fonts for the screen and the printer, or have a mixture of different types of font.

The ability to install several printers, to choose between them by highlighting their icons, and to print a document by dragging its icon to the printer is streets ahead of the Mac and PC equivalents.

The main page layout applications on the Archimedes are Computer Concepts' *Impression* and Beebug's *Ovation*. *Ovation* borrows the feel of early versions of *Quark* on the Macintosh, whereas *Impression* is altogether more quirky. Other software tools integrate well with either of these.

Why an Arc?

Until recently, a bald price/performance comparison pro-

vided strong reason to buy an Archimedes. But that's gone. Today you can get a name-brand 33MHz 486DX PC that in use seems every bit as fast as an A5000, for the same price. Pricewise, Macs still have a way to go, but you can get a decent price on a Centris 610 these days.

Of course, there's all that Macintosh and Windows software out there too, but don't overestimate this: while the range of software is huge, most of it doesn't sell at all. Any horizontal market is dominated by just one or two packages. The rest are irrelevant.

In the professional world, *Quark Xpress* and *Aldus PageMaker* are the page layout standards. The Archimedes, and *Impression*, are not. Why? Aside from the relative merits of *Xpress* or *Impression*, or of hardware price/performance,

companies have to consider the availability of skilled staff, and *Xpress*- and *PageMaker*-trained staff are readily available. Maintenance contracts are also easily available for PC and Mac hardware. And few bureaux can handle Arc discs.

Now there are training facilities for *Impression* users. There are maintenance companies that know about Archimedes. There are even a few bureaux with Archimedes. But finding them is a challenge that makes it easier for the uninformed to choose something else.

Once over this information barrier, Mac, PC and Arc systems can be compared more even-handedly, and the next pages take a look at price and performance issues, the flaws and undoubted merits of *Impression*, and offer a few hints on getting the most from *Impression* and *Ovation*.

The future

Desktop publishing is one of the applications that will be transformed by Acorn developments over the next few months. Photo CD will mean cheap access to quality colour scanning. The basics are clear: you take your photos with your 35mm camera, and for £10 or so, Kodak will put your pictures on a 'gold disc' –

a form of CD. So no more photo albums: you view your holiday snaps on the family telly, which is wired to your CD-Rom player. What's less obvious is that using a colour picture in a DTP'd document will be as easy as pie, because you won't need a colour scanner, only a CD-Rom drive.

Photo CD images are 24-bit. Displaying 24-bit colour on screen is currently impossible, though the specification of the



PhotoCDs stores four versions of each image in varying resolutions (the highest resolution is shown here). This ability is good news for OPI capability: you use the low res image, the printer uses the high res

Price to price

For home, or small office publishing systems, we looked at the price comparisons between the Acorn machines, the Apple Mac and the PC.

Acorn: Archimedes A5000 4/120 (£1600 with multiscan monitor). Add *Impression* (£125), *Artworks* (£125), fonts (£100), LaserDirect LBP-4 (£850). Total £2800. Plan on upgrading with a SCSI card, CD-Rom drive and flatbed scanner.

Apple: Macintosh LCIII 4/80 (£1150 with 14in monitor). Add extra RAM (£125), *Xpress* (£650), *Illustrator* (£400), fonts (£400), Laserwriter Select 300 (£700). Total £3425. Plan to upgrade with a CD-Rom drive and flatbed scanner.

PC: Compaq Prolinea 4/25s 4/120 LB (£1200 with VGA monitor). Add extra RAM (£125), *PageMaker* (£400), *CorelDraw!* (old version) (£135), fonts (£400), HP LaserJet 4L (£600). Total £2860. Plan on upgrading with SCSI card, CD-Rom drive and flatbed scanner.

Comment: This typical Acorn setup is well-balanced, and can certainly cope with the demands placed on it. The Apple system is extremely capable – it won't hold you back – but you're paying a lot for advanced software and you probably won't see the benefit. The performance of the printer in Mac and PC setups will be poor compared with the LaserDirect. A bargain basement PC outfit using a mail-order machine and shareware software could cost as little as £2200 without sacrificing much, but with no after-sales support.

Publishing: For a small publisher, the Acorn set-up would look something like this: add Eizo F550i monitor (£900) and colour card (£250). Four machines to share HP LaserJet 4M (£1500) with a printer sharer (£50). Fit one with an 8Mb upgrade, scanner, Revelation ImagePro and CD-Rom. Total £15,400.

Vide20 chip shows that a 24-bit display figures in Acorn's plan. But unless you aim to retouch images, having a 24-bit display isn't as important as storing and printing 24-bit images.

Current sprite files are limited to eight-bit (256 colours), and though dithering helps on screen, point re-sampling of the dithered image to print it just doesn't work (see page 27 last month). Allied to this is the problem of converting RGB colours such as those in standard sprites and Photo CD images to the CMYK colour model required for process colour printing.

There is another complication. Colour scan files are huge – up to 18Mb uncompressed, as Photo CD pictures are up to 3072 by 2048 pixels, with 24-bit colour. Other quality colour scan files have similar problems. This brings us to OPI. Open Pre-

press Interface is a standard 'automatic' picture replacement system aimed at getting round just such difficulties.

The principle of OPI is that you make up your page and import only a small version of the picture you want to use: the document stays a manageable size, but you can see enough on screen to visualise your completed page. When you print, the name of the picture is sent out instead of the low-resolution picture itself, and it's the job of the printer (or more likely a Postscript RIP) to pick up the name, then get hold of a matching high-res version, and print that.

Each high-res picture has to have a matching low-res screen preview version and on a Photo-CD there are five versions of each picture, from low to high res. It would be straightforward for OPI and

Face to face: a Quark user talks to an Acorn user

In the publishing industry the Mac holds the fort, but are there any real advantages or is it just the product of habit? To find out we put a Mac user face to face with our resident DTP expert...

Q As a Mac user, I am impressed by the Arc... and I have to admit, the software is great value: *Impression* cost you £125 and Quark *Xpress* costs over £600. So if it costs five times as much, what can *Quark* do that *Impression* can't?

A Almost nothing – in this case, the real question is, What can *Quark* do easily that *Impression* can't? The difference is that *Xpress* is fine-tuned for the professional page layout market. So it has some professional features, like a line grid and an off-page area. The grid keeps text in adjacent columns aligned horizontally, even if the columns start at different heights up the page, and the off-page area allows full-bleed items to be set up easily. *Xpress'* typography is better: drop capitals

can be done at the touch of a button, kerning and ligatures can happen automatically, and tracking can be built into your styles. Text can be placed at an angle, so things like corner flashes are easy. Graphics are better too: you can draw rules directly on the page, have frames that aren't rectangular, and text can be run around irregular objects like cutouts.

Q Okay. So what about *Impression*? How does it fare

in terms of features?

A These things can be done. I use *Draw* to do things like rotated text. Irregular runarounds can only be done with lots of little frames – very time-consuming. But items like tracking and auto-kerning, the line grid and a bleed area are in the version of *Impression* to be released at Acorn World. Also, the word processing features of *Impression* are better than *Xpress*: you don't need to use a

Layout to layout: the Mac and the Archimedes

Clothes Show

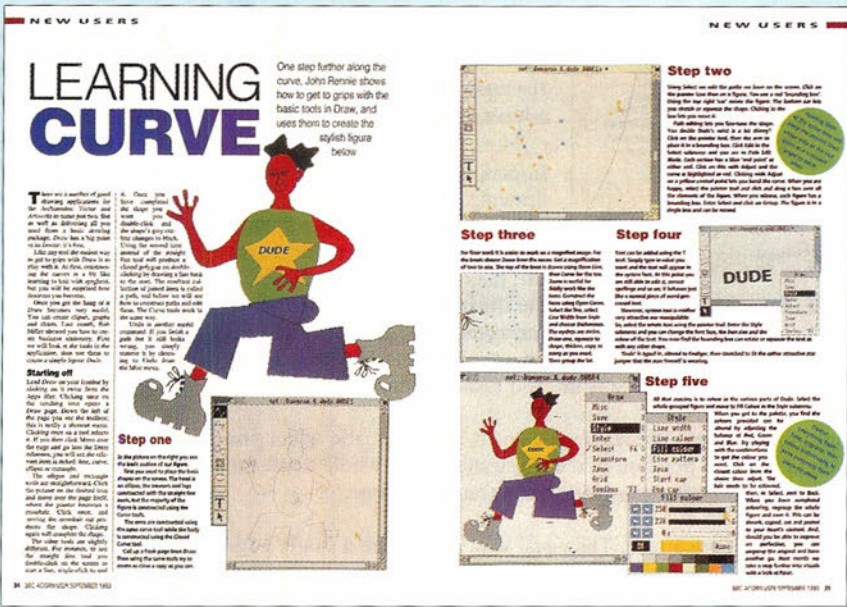
The spread on the right laid out in *Quark* shows some of the features that are difficult in *Impression* – text running around pictures and on angled frames. You can make up this page but only with perseverance. The black bars with white text can be done as a thick paragraph rule off, with an offset to line it up with the text.



The page above however would not be much of a problem for *Impression* because none of the text is around the pictures. The angled frame can be outlined as a drawing, then imported and rotated in an oversized picture box.

Acorn User

Laid out using *Impression*, some of the difficulties on our Acorn User spread have been overcome. The runarounds are achieved using lots of small transparent frames to repel the main body text. The hints in circles have to be prepared as *Draw* files, then imported as a graphics. The headline is kerned, letter by letter.



separate word processor, so importing text with styles already in place is simpler. On the other hand *Impression* has some features that *Xpress* lacks. *Xpress* doesn't have a check-as-you-type spelling checker, mailmerging or abbreviation expansion. Nor can it compile an index or table of contents – *Impression* does this rather well, so it's better for books. *Impression's* guide frames are better than *Xpress's* guide lines: you can position them exactly, for one thing. And *Impression's* style sheets are more flexible too: they can be applied to individual words as well

as whole paragraphs. Things like a timed auto save and multiple views on the same document are useful too.

Q What about colour? Does *Impression* deal with colour in the same way as *Quark*?

A *Xpress* handles scanned colour with Tiff and EPS files, as well as mechanical colour like coloured text and tint boxes. Process colour separations for professional printing have been a problem area for *Impression*: the Business Supplement provides only a basic separation facility.

But the new version of *Impression* called *Publisher* handles 24-bit RGB and 32-bit CMYK colour, including Tiff and EPS files, and you can print out colour separations complete with trim and registration marks. You get full control of halftone screening angles and frequencies too, if you want it.

Although *Xpress* does have an edge, with Pantone colour as well as RGB and CMYK, *Impression* certainly seems to have caught up. It's true that for now, bureau output is still a minor problem for *Impression*. Generally you have to output a Postscript file and send that to the bureau on a PC disc.

But there is a growing number of Archimedes-equipped bureaux and pre-press companies that can take your *Impression* files and deliver printed copies.

Q So would you claim that *Impression* is just as good as *Quark*?

A Almost but not quite. But for a lot of uses, the acknowledged advantages of *Xpress* in handling irregular runarounds and rotated text – which are almost the only ones – simply aren't worth five times the price.

Hints and tips

1 Text is sometimes flowed closely around the irregular edge of an illustration. This is not normally possible using *Impression*, as text is repelled by frames, not their contents – and all frames are rectangular. Ideally, there would be a polygonal frame type, as suggested in the screen shot. But the best workaround possible is still not good.



The lower picture shows how to achieve runarounds in *Impression*

are, the more accurate the final runaround will be. Once it's all carefully masked off, group all the small frames together. Bring the illustration frame to the front, and make it transparent and non-repelling.

Grouping all the little frames makes it less traumatic when you decide to alter the position of the illustration – the whole mask can be repositioned in one go rather than a frame at a time.

2 Drop caps are a pain. The usual way is to create a single large character in a frame of its own, make the frame transparent and non-repelling. Then, arrange a second, smaller, repelling frame, layered over the text but under the drop cap frame, to keep the body text away from the drop cap. Trouble is, the extra frames can't be embedded, so if you edit the text, you have to manually move the drop cap.

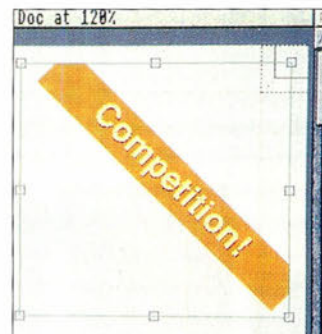
Try this instead. Create a text file as shown: call it DropCapT. Start a new *Impression* document and write a couple of paragraphs: it might help if the first began with a 'T', and the example works best with 12 on 14pt text. Now delete the initial T and drag in the DropCapT file. Almost there. Triple-click to highlight the first line, and apply the DropCapT style.

If your publication has a consistent style, and you always use drop caps of a certain size, then you could set up 26 little text files like this. For each letter, the left-margin and tab setup is different, and if you want three-line drop caps or use different size body copy, you can change the font-size value and the size of the upward kern.

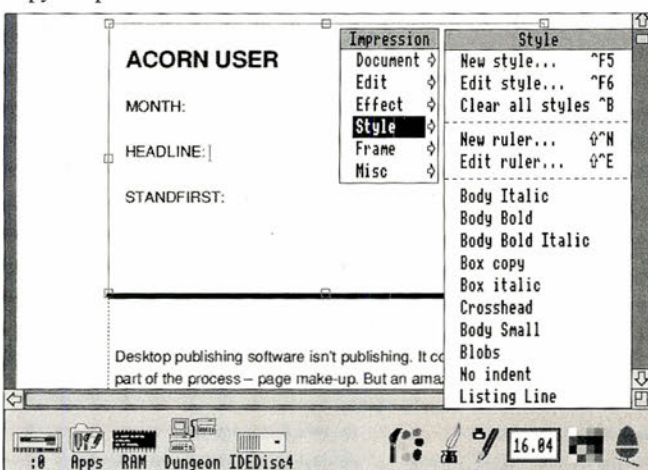
3 A bleed area is vital if you intend to print right up to the edge of the paper. If something goes exactly to the edge of the page, any inaccuracy in cutting the paper to size results in an embarrassing white edge. So things intended to go to the edge should really go a couple of millimetres beyond.

So when you set up your master pages, make the whole thing 10mm wider and 20mm deeper (facing pages generally don't have bleed allowance on the inside edges). Put in a guide frame to show where the intended edge of the paper is, and position frames containing a *Draw* file to act as crop marks. You could also add squares of 25, 50, 75 and 100% black for the printer to check the dot gain.

4 A corner flash containing rotated text has to be prepared as a *Draw* file or *Artworks* illustration. If you plan to print via a printer driver that doesn't support rotated text (for example current LaserDirect and TurboDrivers) then the last thing you should do is turn the text into an outline. This isn't necessary if you're imaging using Postscript. When the illustration is placed on the page, make sure the edges of it carry well over into the bleed area, while the text doesn't go too near the edge of the real page (as marked by the guide frame and the pointer in the screenshot).



5 If you use *Impression* to wordprocess text before importing it onto your page, it can be a handy trick to set up a copy template. This is a normal wordprocessing document, perhaps laid out with a header for the article name and a single column of text. Leave a really big margin for the editor's disparaging scrawls. You probably use a set of stylesheets in your page layouts – perhaps Body, Body Italic, Body Bold and Crosshead are set up in your page templates. Set them up in your copy template too.



The Acorn User copy template, showing the stylesheet

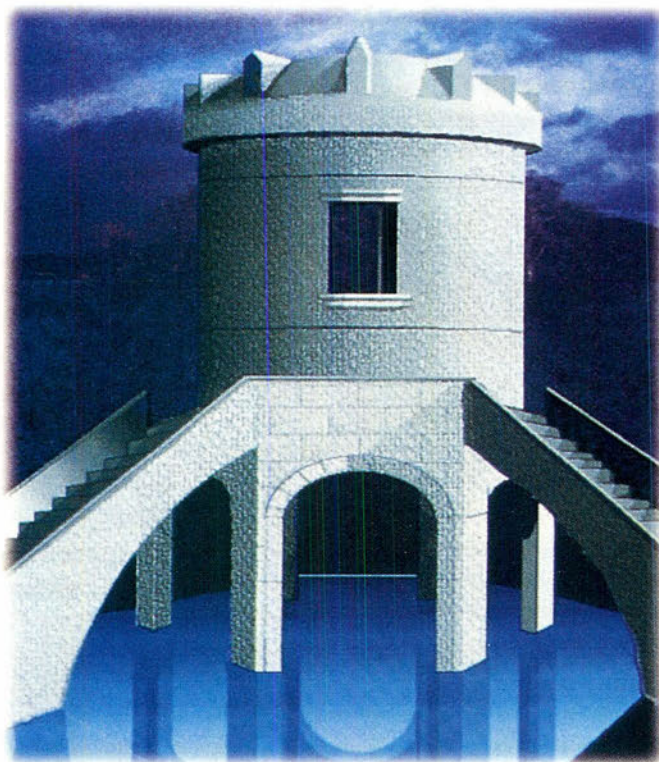
The actual styles don't need to be the same, just have the same name. So in your copy template, Body Italic can be 14pt Homer-ton oblique, to make it easy to edit on screen, but in your page template Body Italic can be 8pt Trinity Italic. You can cut and paste text from your copy template onto your page layout, and the text will adopt the correct style.

6 If you have an A4 printer, then you can't print out anything larger. In fact, on most printers, you even lose another quarter inch or so around the edge of the paper. If you want to print a proof copy of your tabloid-size newspaper, or even something just a little larger than A4, then you can only reduce the output scale to say 90%, or 67% (for A3 size on A4 paper).

Alternatively, a utility called *QuickTile* from Desktop Projects arranges the output across a couple of separate pages. You can trim and stick them together to make up your page.



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turning concept ...

For the past five years Atomwide have specialised in producing high-performance solutions for the entire range of Acorn 32-bit computers. From the first ARM3 board to the latest in SCSI technology, we have continued to deliver innovative products which complement the power of the Archimedes.



Memory is an important part of a computer system and increasing it will greatly enhance the performance of the machine. The A300, A400, A400/1 and A5000 can now all be expanded to a full 8Mb RAM by installing one of Atomwide's new range of memory upgrades.

All machines require 4Mb of RAM to be present before installing the new memory upgrade. The A300 series 8Mb upgrade is compatible with the Atomwide soldered-in 4Mb upgrade whilst the A5000 series 8Mb RAM upgrade will work with any vertically-mounted 4Mb plug-in card.

The upgrade consists of two small plug-in circuit boards so there is no soldering required. Compact design means that reduction in air-flow is kept to a minimum making sure that a low operating temperature is always maintained.

The design of all 8Mb upgrades means that you can fit large operating system ROMs (i.e. RISC OS 3) in

your machine, without the need for a separate header board. Compatibility with all releases of the operating system is therefore ensured.

A400/1

A5000

... into reality

A T O M W I D E

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Tel 0689 838852 Fax 0689 896088
Email: sales@atomwide.co.uk



The brief? Produce a monthly journal of 800 pages, heaving with scientific diagrams and customised fonts to emulate the historical originals. Impossible? Not with an Acorn.

JoP is a hardback, A5 monthly, containing nearly 800 pages of scientific material. Now this is a mammoth task. To put it in perspective, *Acorn User* averages 60 to 70 editorial pages per month. *JoP* makes your average Russian novel look like the back of a Cornflakes packet.

Add to this the fact that the features come in from a multitude of worldwide contributors in a myriad formats, that these pieces contain extraordinarily detailed diagrams and complex scientific terminology and the Society creates its own tailored fonts and you have a DTP task that would have the average production editor ripping his hair out. And the machine they chose to scale this peak is our own Acorn. The Acorn can do this? Just think the power the machine can bring to producing your own magazine.

The Journal

Cambridge University first published the *Journal of Physiology* in the 19th century, on behalf of the Physiological Society. The aim was to document the latest discoveries in the structure and function of biological systems. Today, under the banner of Cambridge University Press, the journal presents its international readership with scientific and medical research papers breaking new ground in all the fields encompassed by physiology. But the production of the journal has itself broken new

Let's get physical

So you think you have a mountain to climb publishing your own newsletter? Take a look at the publishing brief for the *Journal of Physiology*, says Jack Kreindler

ground... in the use of Acorn technology.

Only recently has the editing department of the Physiological Society (Cambridge University) taken its journal to the camera ready copy (CRC) stage, something previously done on the Macs 'downstairs' where the budgets are as big as national deficits.

The hardware expenditure on the Acorns is a 'mere' £50,000 to date – a fraction of the cost of conventional professional systems. Cheap yes, but not nasty. The quality of copy is first class.

But why Acorns?

Moving towards Acorn has been the responsibility of the journal's DTP editor, Clive Semmens. An experienced pro-

grammer and font designer, Clive has revolutionised the operation both financially and in terms of efficiency.

He considers the Arm3-driven A5000s and A540s superior to any Quadra (Mac) or new i586 PC this side of £10,000, both design- and performance-wise. Nevertheless, he took a brief look at

Macs and PCs. Other than processor power, the Acorn had two big things going for it. First the ease of producing fonts is unequalled.

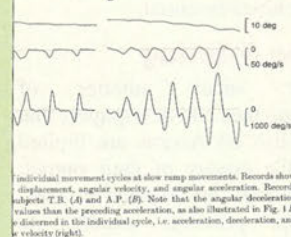
Secondly, any software inadequacies could be alleviated, without difficulty, thanks to the ease of programming Risc OS-compliant utilities. Also, DTP packages for the Arc, though not as numerous as on other platforms, are very powerful.



The Journal has a wealth of top-of-the-range hardware at its disposal

A. B. VALLBO AND J. WESSBERG

of the kinematics of the individual 8-10 Hz movement cycles of an interesting feature. In very slow voluntary ramps, the speed at zero for short intervals between phases of angular displacement (Fig. 6A). Thus, the voluntary ramps were, at least



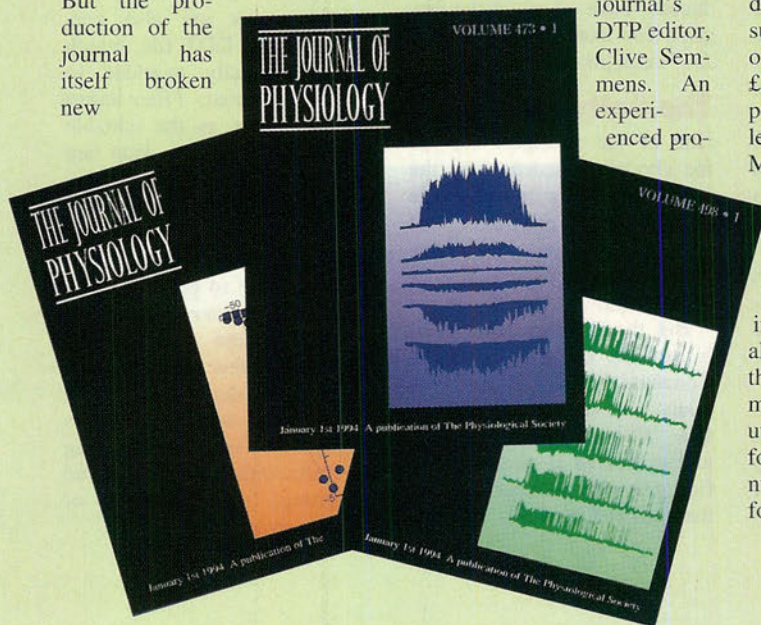
individual movement cycles at slow ramp movements. Records show displacement, angular velocity, and angular acceleration. Records subjects T.B. (A) and A.P. (B). Note that the angular deceleration values are less than the preceding acceleration, as also illustrated in Fig. 1B. A deceleration is the individual cycle, i.e. acceleration, deceleration, and velocity (right).

as a series of displacements alternating with short intervals was held stationary. In slightly faster ramps, a feature of the movement was seen. Figure 6B illustrates that the fast deceleration

A section from the final pages

The Hardware

The Journal runs five A5000s, plus five A540s packing up to 16Mb of RAM. All of them have State Machine Graphics Cards and everyone is linked through an Ethernet. There are

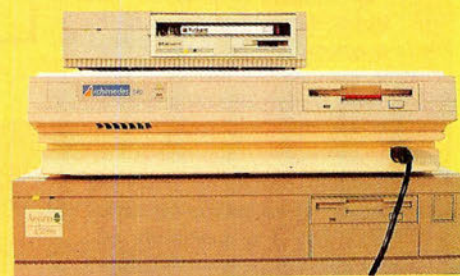


THE DTP SETUP

From the scanners to the printers, we took a closer look at the journal's DTP line-up



Scanning in illustrations is achieved using two flatbed scanners. The journal chose A4 flatbed scanners from DT Software, which can offer 1600 x 1600dpi maximum resolution and 24-bit colour scanning. Paint and Draw are used for image enhancement and Artworks for importing font-outlines and graphic files.



The Journal runs on A5000s with up to 8Mb Ram, and A540s with 12 or 16Mb Ram. They all have 120Mb hard drives and State Machine Graphics Cards and are linked into an Ethernet network with a 500Mb fileserver. The backups go onto a Syquest drive.

nine workstations altogether. For storage the fileserver holds half a gigabyte of uncompressed data on its SCSI drive. A Syquest removable hard disc system is used for archiving.

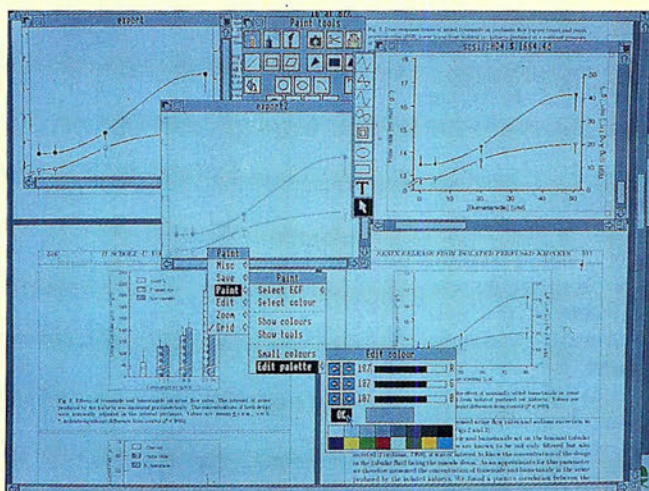
When all your working day is spent in front of a monitor, your eyes are put through an incredible amount of strain. Viewing your screen on large, very high resolution monitors is the only way of minimising the effects. Nine 20in Taxan, low-radiation monitors dominate the workspace, dwarfing the superb Sony and Eizo 17inchers also used. The huge screen resolutions are courtesy of State Machine.

Image inputting is managed by two flatbed GT 800 scanners (DT Software) capable of generating 24-bit Clear files and 256 greyscale sprites, which occupy massive slabs of RAM, making the 8 and 16Mb machines essential.

The Printing

The small number of magazines and newspapers that publish on Acorns are limited in the quality of their output, and rely on expensive Postscript printing, usually via Macs, to produce quality CRC. JoP was the first to use nothing but the Acorn platform to produce its A3 CRC, impossible but for Calligraph.

Calligraph has used the JoP as a beta-test site for the development of its laser-direct A3 printers. Richard Piller, the brains behind Calligraph, used his direct-drive engineering to build a bridge between the



The images are scanned in and processed using Paint and Draw

Hardware expenditure is a mere £50,000: a fraction of the conventional cost

Journal's work on Acorns and the press camera. JoP is the only test site to operate two of the magnificent Calligraph TQ1200 lasers.

Just for the record, there are also two A4 notebooks, a Canon BJ300 bubble-jet, a lonely Mac II and an even more lonely PC. Yet, impressive as it now stands, this catalogue of hardware is growing all the time with the increasing number of production and editing staff.

Another office with workstations of similar specification should be fully functioning by October, when the entirety of the Journal will be Acorn-pro-

duced. Take a look at the diagram for exact details of the JoP's equipment.

The Software

One of the strongest reasons for choosing Acorns was the ease of hacking into the file structures of programs and redesigning them to create their 'own user-friendly custom utilities'.

But the DTP software itself is straight off the Computer Concepts shelf. CC has won many awards for its *Impression II* publishing software, and so it came as no surprise to find not one iconbar without the quill and inkwell.

The State of the Art

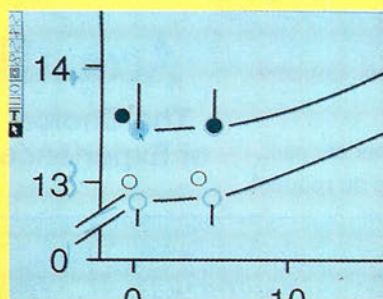
The Journal has been responsible for some pretty remarkable achievements in font design and DTP utilities and is a test bed for important desktop-printing developments. All the custom software has been designed and written, by the DTP editor. Below, we list the most important of these Risc OS-compliant utilities.

● **Filter** Drag any wordprocessor file onto the icon and, regardless of source program or computer format, an *Impression* DDT (Document Description Format file) will be created. *Filter* processes the WP/ASCII file in a multipass routine. First is identification, the second stage is source-specific structure processing. Thirdly, there are two source-specific independent sequence translations.

Common misspellings and Americanisms are also corrected in the DDT file, which is automatically moulded to the JoP's format. *Filter* learns and improves as the editable search and replace lists are revised with increased knowledge of source formats.

The nearest equivalent to *Filter* on a Mac Quadra needs several hours to process a 16-page file; *Filter*, thanks to some hardcore ARM code, takes only a few seconds.

● **FinalF** does substitution tasks that are tedious in *Impression*, such as replacing ligatures with standard text and adjusting the position of accents over letters.



The journal uses its own filtering program to read in any text format. Design is carried out using Impression and a font that they designed themselves to cope with physiological symbols. For clear displays, much of the design takes place on Taxan 1095 low radiation, 20" monitors with multi-scanning Trinitron



Printers play an important role in the process as they produce the camera ready copy. The journal uses Calligraph TQ1200 A3 laser printers which normally work to a resolution of 600 x 600dpi. However, they have managed to manipulate this and thus produce a higher resolution of 1200 x 1200dpi.



Finally the output: a complete monthly book. When the entire journal moves over to Acorn production, this will be a staggering 800 pages per month. Future plans for the Journal of Physiology include the introduction of full-colour pages, magneto optical drives and much more. Watch this space...

● **JoPKeys** redefines the keyboard so the myriad customised fonts can be accessed with key presses: Ca^{2+} x10-1 can be typed without using menus and leaving the keyboard.

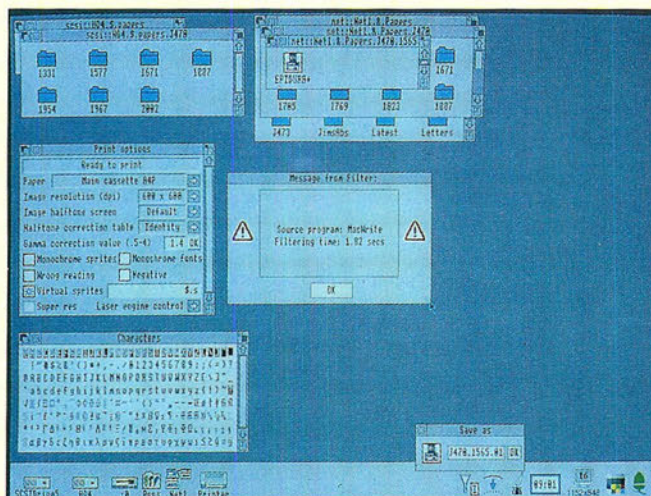
● **ReDraw** converts the eight colours in *!Draw* objects filled with one of the eight set colours into hatched or crosshatched line shading. Similarly, turns line colours into dashed or dotted lines.

Custom fonts

The Physiological Society had to emulate the original style of the *Journal* to the finest degree. Typesetting and typefaces had to be meticulously studied so the transition from Mac to Acorn would be completely seamless. The result was the creation of 18 fonts under the family name of JoP Modern: bold, bold italic, inferior, inf ital, ital, raised inf, raised sup, raised inf ital, raised sup, raised sup ital, sans, sans oblique, sloping, sloping smallcaps, smallcaps, special, superior and superior ital – 637K in all.

All characters were scanned at 1600dpi, sent into *Draw* to be traced and, using *D-2-Font*, exported into *Font Editor*, to be fully scaffolded and so forth. For speed of text entry and editing, a custom keyboard and font layout was designed which translates key presses into greek peculiars, superiors, inferiors, assorted space sizes and ligatures, without selecting specific fonts.

But the proof of the success is in the results. How well have



Filtering in text from other formats using their own Filter application

Right now the journal is a showcase for the publishing industry not just Acorns

they managed to copy the existing *Journal* style and how good was the final output quality from the Calligraph printers? After scouring the latest issue however, it was impossible to detect any differences between the parts still produced 'downstairs' on £14m imagesetters, and the papers produced by the Physiological Society, on Acorns.

The direct-drive Calligraphs spit out A3 pages crammed with complex text plus graphics in around 35 seconds. This is faster, believe it or not, than an equivalent PostScript printer whacking out the same thing at half the resolution on

A4. Richard Piller has managed to tweak the TQ1200's engine to produce twice its true resolution of 600dpi, in both axes, and is near to reaching the targets of 200-line halftoning (for four-colour separation) and 196 greyscales.

The printer driver has control over a large range of resolutions, halftoning and gamma correction and, astonishingly, desktop manipulation of laser power and toner transfer level.

These last two options mean that the journal can now look at printing straight on electrostatically insulating material such as Plazer. Plazer plates

reduce the stray dipping of ink dots found when printing on paper and the sharpness of laser print can be increased considerably. Until now no one has managed to make such materials accept the toner used in laser printers.

Other interesting and useful features are the image manipulation facilities (including monochrome and negative printing options) enough to make most paint packages seem pretty inadequate.

Calligraph has developed its own system of OPI, called *Virtual Sprites*. Quarter sprites (of, yes, quarter resolution) appear in the frames usually filled by your memory-munching piccies.

The Future

From January 1994 *JoP* will be changed into a full-colour A4 paperback. The changes in format will be catered for by the continual growth of the *Journal's* editorial kitchen.

Magneto-optical drives, printing onto Plazer from the TQ1200s, and the gradual phasing-in of Acorn's forthcoming Arm700-series machines are all strong possibilities for the near future. We may even see the *Journal* cooking up colour proofs on dye-sublimation printers.

The future promises much. Right now, the *JoP* is a showcase for the publishing business, and not just for Acorn. Because of its pioneering work and its low cost, it offers a signpost for the world of professional publishing.

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If you need a 256 grey-scale hand scanner for your Archimedes then look no further. Scan256 gives you up to 256 levels of grey at a maximum of 400dpi and is supported by state-of-the-art sophisticated software - for only £159. This makes it the only sensible scanning and image processing solution for the Acorn 32-bit range. Just compare these features:

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- True brightness, contrast and gamma correction.
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- Plus much much more...

Please specify Archimedes type, not compatible with A3010, A3020 and A400. £159

• Scan256 for A3000 Micro £169

RISC OS 3.1 Upgrades

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- Bulk (10) Software Upgrade Kit £309

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All above 3.5" Drives are supplied complete with Controller Card & cable for use with A300/A400 /A500 series machines.

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A5000 Internal IDE Drive

Can be used as 2nd Internal IDE Drive

| | | | |
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| ADA 1030 | 80Mb | 17mS | £149 |
| ADA 0940 | 105Mb | 16mS | £189 |
| ADA 0950 | 210Mb | 15mS | £259 |
| ADA 0580 | 330Mb | 15mS | £399 |

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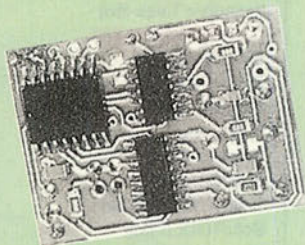
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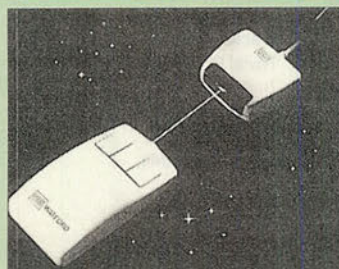


Our two unique VDC add-on boards for the Archimedes cater for all VGA and Multiscan monitors and screen modes. The multimode software supplied provides all the new modes for the selected monitor type, including the now standard Computer Concepts modes. With VGA monitor, you are no longer restricted to a few modes. A Desk Top application supplied in disc, allows new modes to be designed and existing modes to be modified for particular monitors.

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Using this simple data link, it is possible to solve all your BBC to Archimedes data transfer problems. The kit is supplied with a disk, and the necessary cable to connect the two computers.

• RISC OS 2 Version **£15** • RISC OS 3 Version **£16**
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A3000 I/O Card (User, Analogue & IIC)

This NEW versatile I/O Card from Watford, fits inside the A3000 and includes an Analogue to Digital Converter, a User Port, and an InterIC (IIC) connector.

The card allows many of the peripherals developed for the BBC to be used with the Archimedes A3000. The ADC and User Port have the same pin out and connectors as the BBC computers.

Extensive RISC OS software is supplied to provide BBC OSBYTE calls for support of the ADC and User Ports, including the BASIC keyword ADVAL. The software provides extended RISC OS support for separate interrupts from both the ADC and User Ports, permitting easy interrupt driven operation.

The card is provided with all the software in ROM and is automatically loaded when the machine is turned on.

Peripherals connected to the ports can obtain up to 500mA of power at +5V. A fuse is fitted to the card to protect the A3000 from damage arising from accidental short circuit of the power output.

Features

- An 8 bit User Port with a standard 20 way IDC connector, compatible with the User Port on the BBC computers and the Archimedes I/O Podule.
- A 10 bit Analogue to Digital Converter with a standard 15 way D-type connector, compatible with the ADC on the BBC range of computers and the Archimedes I/O Podule.
- An InterIC (IIC) Port with a 5 pin DIN socket to connect the A3000 to external IIC devices **£38**

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Eliminates need to have a User Port in A3000/305/310/400/540 when using Concept Keyboard **£28**

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Archimedes External Disc Drive Interface

With this interface it is possible to connect almost any 5.25"/3.5" disc drive with its own power supply to the Archimedes. Up to 4 disc drives can be connected. Fully Buffered Board. NO SOLDERING is involved. Supplied complete with necessary lead.

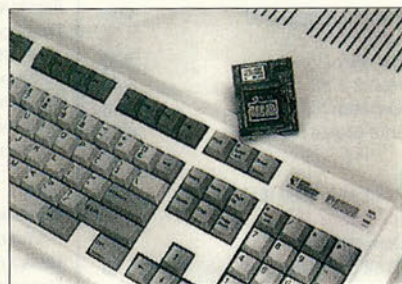
Price £21

Back Plate Extension

- A300/400 **£15**
- A3000 **£14**

ARM 3 Turbo Card Mk II

Simply The Best



Here it is at last – the all new Mark 2 version of Watford's highly acclaimed ARM 3 processor board for the Archimedes and now also the A3000 series computers. Using the latest surface mount technology on a high quality four layer circuit board we have reduced the overall size to a mere 53mm x 45mm, and the cost to only £145. Mk II upgrade will increase the speed of your micro by a factor of 3 to 6. Any competent A300 or A400/1 series micro owner can fit the upgrade himself, as we provide full fitting instructions and a special ARM chip extraction tool. However, for A3000 micros and those not wishing to perform the upgrade themselves, we will collect, upgrade and return your micro by courier service, at an additional cost of £24. (A300 and old A440 series owners please note – you will need to upgrade to MEMC1A for ARM3 to work.)

RRP £249

Special Offer £125

Network Accessories/Software

| | |
|--------------------------|-------|
| BBC B Econet Kit | £42 |
| Master Econet Module | £40 |
| Archimedes Econet Module | £40 |
| A3020/4000 Econet Module | £49 |
| Acorn A4 Econet Module | £50 |
| Archimedes Ethernet Card | £139 |
| A3020/4000 Ethernet Card | £179 |
| AUN/Level 4 Fileserver | £379 |
| Econet Starter Kit | £137 |
| 100m Econet Cable | £99 |
| Econet Socket Box | £7.50 |

(P.S. Full range of Network Accessories /Software/Site Licences available. Telephone for details.)

Leasing finance at very attractive rates now available to Businesses (subject to status), Schools, Colleges, Universities, Government Depts. and Local Councils.

Continued → → → →

Archimedes Software

| | |
|-------------------------------|-----|
| 10 out of 10 Early Essentials | £18 |
| 10 out of 10 English (Ed) | £18 |
| 10 out of 10 Maths (Ed) | £18 |
| 3D Construction Kit (Ga) | £25 |

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| A corn DTP (De) | £49 |
| Acorn Advance | £88 |
| Air Supremacy (Ga) | £15 |
| Ancestry (Mi) | £58 |
| Animated Alphabet (Ed) | £21 |
| An Eye for Spelling (Ed) | £31 |
| Arcade 3 Compilation (Ga) | £12 |
| ArcComm 2 (Mi) | £45 |
| ArcLight (Gr) | £40 |
| Arc-PCB (Mi) | £79 |
| Arc-PCB Pro (Mi) | £169 |
| Arc-PCB Schematics (Mi) | £229 |
| ArcTeam 7 (Mi) | £58 |
| ARCTist (Gr) | £18 |
| ARCTiculate (Mi) | £18 |
| Arcventure - The Romans | £29 |
| Arcventure - The Egyptians | £29 |
| Arcventure - The Vikings | £29 |
| Armadeus Sound (Mi) | £58 |
| Artworks (Gr) | £120 |
| Atelier (Gr) | £60 |
| Artisan 2 (Gr) | £42 |
| Autosketch II (Gr) | £65 |
| Avante Garde Fonts (Mi) | £23 |

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| B asic Compiler (La) | £77 |
| Battle Chess (Ga) | £20 |
| Battletank (Ga) | £9 |
| BBC DFS Reader (Mi) | £6 |
| Best Four Adventures (Ed) | £34 |
| Best Four Language (Ed) | £34 |
| Best Four Maths (Ed) | £34 |
| Blackangel (Ga) | £25 |
| Bookbinder (Ed) | £43 |
| Bookstore - Primary (Ed) | £35 |
| Bookstore - Secondary (Ed) | £52 |
| Boogie Buggie (Ga) | £14 |
| Break 147 + Superpool (Ga) | £19 |
| Britain since 1930's (Ed) | £26 |
| Broadcast Loader (Mi) | £65 |
| Bughunter in Space (Ga) | £9 |
| Bumper Disc 1 (Ed) | £14 |
| Bumper Disc 2 (Ed) | £14 |

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| C ADet (Gr) | £140 |
| Cambridge Pascal (La) | £75 |
| Cataclysm (Ga) | £17 |
| Caverns (Ga) | £10 |
| Chameleon (Mi) | £32 |
| Champions (Ga) | £23 |
| Chart Well (Mi) | £24 |
| Chatter (Mi) | £33 |
| Chess 3D (Ga) | £16 |
| Chocks Away Comp. (Ga) | £26 |
| Chocks Away Extra (Ga) | £14 |
| Chopper Force (Ga) | £18 |
| Chuck Rock (Ga) | £16 |
| ClipArt Set 1 (Gr) | £27 |
| ClipArt Set 2 (Gr) | £27 |
| Compression (Mi) | £32 |
| Concept Designer (Ed/Gr) | £22 |
| Converta-Kev (Ed) | £9 |
| Craftshop 1 (Gr) | £18 |
| Craftshop 2 (Gr) | £18 |
| Cyber Chess (Ga) | £25 |
| Cycloids (Ga) | £20 |

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| D ataVision (Mi) | £66 |
| Data Word (Ed) | £14 |
| Demons Lair (Ga) | £19 |
| Deskedit 2 (Mi) | £24 |
| Desktop C Rel. 4 (La) | £179 |
| Desktop Folio - Wordprocessor, | |
| Desktop & Interactive Publishing | £59 |

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| Desktop Office - Database, Graphs & Charts, Wordprocessor, Spreadsheet & Communications | £69 |
| Desktop Stories (Ed) | £35 |
| Desktop Thesaurus | £16 |
| DigiSim (Ed) | £35 |
| Dream Time (Ed) | £23 |

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| E asiwriter II (Wo) | £114 |
| Easiword (Wo) | £43 |
| Ego Repton 4 (Ga) | £17 |
| Elite (Ga) | £31 |
| Enter the Realm (Ga) | £17 |
| Equasor (Mi) | £36 |
| E-Type Compendium (Ga) | £17 |
| E-Type Designer (Ga) | £13 |
| Euclid 2 (Gr) | £40 |
| Eureka (Sp) | £95 |
| ExcellonDRILL (Mi) | £49 |
| Export, Trade & Industry (Ed) | £34 |
| Expression PS (Mi) | £19 |

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| F arm 5-7 years (Ed) | £18 |
| Fervour (Ga) | £18 |
| FilmMAKER (Gr) | £55 |
| First Logo | £23 |
| Fleet Street Phantom (Ed) | £23 |
| Flexifile (Mi) | £69 |
| Fun School 3 Red - up to 6 years (Ed) | £16 |
| Fun School 3 Green - 6-8 years (Ed) | £16 |
| Fun School 3 Blue - over 8 years (Ed) | £16 |

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| G alactic Dan (Ga) | £18 |
| GammaPlot (Gr) | £39 |
| Gate Array Teaching System (Ed) | £68 |
| Genesis (Mi) | £10 |
| Genesis 2 (Mi) | £99 |
| GerberPLOT (Mi) | £49 |
| Glimpse Clip Art Utility (Ed) | £8 |
| Gods (Ga) | £18 |
| Graphbox (Gr) | £56 |
| Graphbox Prof. (Gr) | £102 |
| Grievous Bodily Arm (Ga) | £17 |

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| H ero Quest (Ga) | £23 |
| Hiligher (Ed) | £30 |
| Holed Out Designer (Ga) | £13 |
| Holed Out Golf Comp. (Ga) | £17 |
| Hoitlink Presenter (Gr) | £40 |

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| I llusionist (Gr) | £68 |
| Impression II DTP (De) | £115 |
| Impression Junior (De) | £63 |
| Impression Business Supp. | £39 |
| Impression II Borders | £18 |
| Interdictor 2 (Ga) | £23 |
| Investigating Maths (Ed) | £34 |
| Investigator 2 (Mi) | £20 |
| Iron Lord (Ga) | £13 |

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| J ahangir Khan Squash (Ga) | £19 |
| Jigsaw (Ed) | £18 |

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| K ermit (Mi) | £46 |
| Kid Pix (Ed) | £34 |
| Knowledge Organiser II | £75 |

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| L andmarks Aztec | £19 |
| Landmarks Columbus | £19 |
| Landmarks Egypt | £19 |
| Landmarks Rainforest | £19 |
| Landmarks Victorians | £19 |
| Landmarks World War II | £19 |
| Lemmings (Ga) | £18 |
| Linkword French (Ed) | £32 |
| Linkword German (Ed) | £32 |
| Linkword Spanish (Ed) | £32 |
| Logotron Logo (La) | £45 |

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| Lotus Turbo Challenge (Ga) | £18 |
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| M acro Assembler (La) | £44 |
| Mad Prof. Mariarti (Ga) | £14 |
| Magpie 2 (Mi) | £49 |
| Mahjong Patience (Ga) | £15 |
| Making of the UK (Ed) | £35 |
| Mapping Skills (Ed) | £25 |
| Mapventure (Ed) | £22 |
| Masterbreak (Ga) | £13 |
| Man at Arms (Ga) | £14 |
| Man. United II (Ga) | £18 |
| Man. United Europe (Ga) | £19 |
| Medieval Realms (Ed) | £35 |
| Microbugs (Ed) | £24 |
| Mogul (Gr) | £17 |
| Money Matters (Ed) | £14 |
| Monotype Fonts (Mi) | £75 |
| Multistore v2.01 (Da) | £99 |

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| N ature Park Adventure (Ed) | £24 |
| Nebulus (Ga) | £18 |
| Nevryon II (Ga) | £20 |
| Notate (Mi) | £41 |
| Number in the National Curriculum (Ed) | £34 |
| Numerator (Mi) | £38 |
| Numerator Chaos | £18 |
| O h No More Lemmings (Ga) | £14 |
| Omar Sharif's Bridge (Ga) | £18 |
| Ovation DTP (De) | £82 |

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| P andoras Box (Ga) | £17 |
| Payroll Manager (Mi) | £66 |
| PCAD Educ (Gr) | £395 |
| Pendown (Wo) | £46 |
| Pendown Plus (Wo) | £67 |
| Picture Book (Ed) | £14 |
| Pinpoint (Da) | £64 |
| Pinpoint Junior (Da) | £23 |
| Pipedream 3 (Wo) | £70 |
| Pipedream 4 (Wo) | £117 |
| Pipe Mania (Ga) | £15 |
| Play It Again Sam (Ga) | £17 |
| Podd (Ed) | £23 |
| Plyglot (Mi) | £16 |
| Populous (Ga) | £21 |
| Poster (Gr) | £74 |
| PowerROUTER (Mi) | £125 |
| Presenter GTI (Mi) | £65 |
| Presenter Story (Mi) | £145 |
| Primeword (Wo) | £50 |
| Prophet Accounts (Mi) | £132 |
| Prophet Demo Disc (Mi) | £10 |
| ProArtisan (Gr) | £69 |
| ProCad (Gr) | £390 |
| PrimeArt (Gr) | £46 |
| Pysanki (Ga) | £14 |

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| Q uark (Ga) | £19 |
| Quazar (Ga) | £10 |
| Quest for Gold (Ga) | £15 |

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| R ainforest (Mi) | £17 |
| Real McCoy 2 (Ga) | £21 |
| Real McCoy 3 (Ga) | £22 |
| Real McCoy 4 (Ga) | £22 |
| Recall (Ed) | £36 |
| Redshift (Ga) | £9 |
| Render Bender 2 (Gr) | £77 |
| Return to Doom (Ga) | £16 |
| Repton 3 (Ga) | £18 |
| Revelation 2 (Gr) | £74 |
| Rhapsody 2 (Mi) | £44 |
| Rhapsody 3 (Mi) | £78 |
| RiscBasic Compiler (La) | £66 |
| RiscForth Compiler (La) | £66 |
| RoboLogo (La) | £38 |

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| S aloon Cars Deluxe (Ga) | £24 |
| S-Base Personal | £79 |
| S-Base Developer | £150 |
| Schema (Sp) | £89 |
| ScoreDraw (Mi) | £43 |
| Selladore Tales (Ed) | £24 |
| Shareholder Pro (Mi) | £129 |
| Showpage (Gr) | £127 |
| SigmaPlot (Gr) | £39 |
| Sim City (Ga) | £22 |
| Skyhunter | £22 |
| Snippet (Ed) | £31 |
| SolidCAD (Gr) | £65 |
| SolidsRENDER (Gr) | £65 |
| SolidTOOLS (Mi) | £169 |
| Space Mission Mada (Ed) | £23 |
| Speech! (Mi) | £15 |
| Stig of the Dump (Ed) | £22 |
| Stunt Racer 2000 (Ga) | £24 |
| SuperDUMP (Mi) | £17 |
| Superior Golf (Ga) | £13 |
| SuperPLOT (Mi) | £17 |
| Swiv (Ga) | £18 |

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| T alisman (Ga) | £8 |
| Technodream (Ga) | £19 |
| Time Tabler (Mi) | £499 |
| Time Traveller (Ed) | £31 |
| Titler (Gr) | £115 |
| Toolkit Plus (Mi) | £35 |
| Topographer (Mi) | £62 |
| Touchtype (Mi) | £35 |
| Tracker (Mi) | £37 |
| Trivial Pursuit (Ga) | £22 |
| Turbo Driver BJ10e (Mi) | £41 |
| Tween (Gr) | £23 |
| Twin World (Ga) | £14 |
| Type Studio (Mi) | £38 |

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| U IM (Ga) | £23 |
| V ictorians (Ed) | £19 |
| Viewpoints (Ed) | £33 |
| Virtual Golf (Ga) | £24 |
| VoxBox (Mi) | £45 |

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| W hite Magic 2 (Ga) | £15 |
| Wimp Prog. Toolkit (Mi) | £16 |
| Wizards Revenge (Ed) | £17 |
| Wordz (Wo) | £85 |
| World Maker (Ed) | £46 |
| World Map Study (Ed) | £59 |
| Worldscape (Ga) | £16 |
| Worst Witch (Ed) | £21 |

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| X -Fire (Ga) | £19 |
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| Z elanites (Ga) | £14 |
| Zool (Ga) | £19 |

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| KEY | |
| (Gr)aphics | (Sp)readsheet |
| (Ga)me | (Da)tabase |
| (Ed)ucational | (In)tegrated |
| (Mi)scellaneous | Package |
| (Wo)rdprocessor | (La)nguage |

HOW TO ORDER



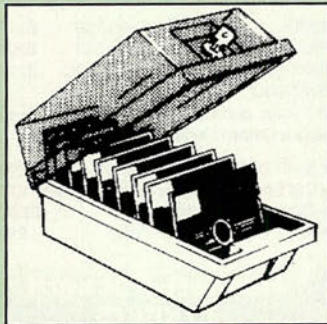
TELEPHONE
(0582) 48 77 77

Archi Mk II Hand Scanner

Watford's Mk II hand scanner has a maximum resolution of 400dpi. The scanning width is 4". The sophisticated software is supplied in a 64K ROM, located on a standard single width expansion module. As you scan a page, the image appears in the scanning window on the screen, scrolling up in real time. Other facilities include cropping and scaling to any size including stretching and squashing in X and Y directions separately. Colour tinting, X and Y flip, edge detection which turns solid objects into outlines. Images can be printed on any printer supported by RISC OS. On-screen help is provided via the RISC OS interactive help facility. (Please write in for full technical details).

AHS-4 Archi 300/400 Version £89
AHS-3 Archi A3000 Version £99

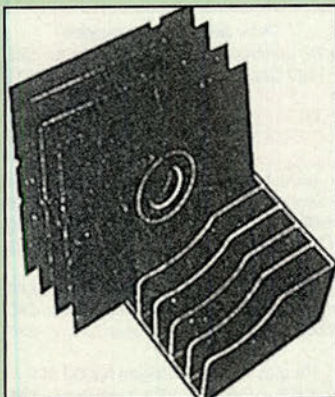
Antistatic Lockable Disc Storage Units



- M35 - holds up to 50 5.25" discs £4.95
- M85 - holds up to 95 5.25" discs £6.95
- M25* - holds up to 25 3.5" discs £4.95
- M50 - holds up to 50 3.5" discs £6.50
- M100 - holds 100 3.5" discs £6.99

*Not lockable

Disc Plonker Rack



When using ones micro, there is a tendency to have more than one disc on the desk. This exposes them to the hazards of fingerprints, scratches, dust, coffee and an untidy desk. Why not protect your valuable data from all these hazards with the help of our extremely hardy and low cost DISC PLONKER RACK. Holds up to eight 5.25" discs. £2

3M - Diskettes

Lifetime warranty on 3M Discs

- 10 x 5.25" S/S D/D 40T (744) £5
- 10 x 5.25" D/S D/D 40T (745) £5
- 10 x 5.25" S/S D/D 80 Track (746) £6
- 10 x 5.25" D/S D/D 80 Track (747) £7
- 10 x 5.25" 1.6M D/S H/D for IBM £8
- 10 x 3.5" S/S D/D 40/80 Track £6
- 10 x 3.5" D/S D/D 40/80 Track £6
- 10 x 3.5" D/S H/Density £10

Top Quality Diskettes

Watford's lifetime guaranteed discs are supplied complete with self stick labels & plastic library case.

- 10 x M3 3.5" D/S D/D 80 Track £6
- 10 x M9 3.5" D/S High Density £10
- 10 x M4 5.25" S/S D/D 40 Track £5
- 10 x M5 5.25" D/S D/D 40 Track £5
- 10 x M7 5.25" D/S D/D 80 Track £6
- 10 x M8 5.25" D/S H/D Hi-Density £9

Special Bulk Offer Discs

(Lifetime warranty on Discs)

BULK PACK DISCS in lots of 100

| Type | S/S 40T | D/S 40T | D/S 80T |
|----------------------|---------|------------|-------------|
| • With Sleeves 5.25" | £28 | £33 | £38 |
| • 3.5" D/S D/D | | £21 for 50 | £39 for 100 |
| • 3.5" D/S H/D | | £40 for 50 | £75 for 100 |

Disc Drive Power Leads

Supply from BBC power supply to standard Disc Drive Connection:

| | |
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| Single | £3.00 |
| Dual | £3.75 |

Disc Drive Interface Leads

BBC to Disc Drives Ribbon Cable

| | |
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| Single | £4 |
| Twin | £6 |

3.5" Disc Drives



These top quality 3.5" Double Sided, 80 Track, are attractively finished in BBC beige. They are supplied complete with all cables and a Utilities Disc.

| Type | Description | |
|----------|-------------------------------|------|
| | Disc Drive without PSU | |
| • CLS35: | Single Disc Drive, 400K | £59 |
| • CLD35: | Twin Disc Drives, 800K | £109 |
| | Disc Drive with PSU | |
| • CS35: | Single Disc Drive, 400K | £82 |
| • CD35: | Twin Disc Drives, 800K | £126 |

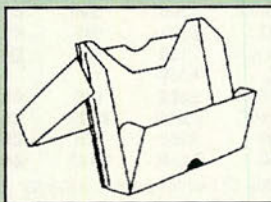
(PS. CS35 is supplied in a twin case with a blanking plate to enable expansion to a dual drive at a later stage.)

Disc Drives in Monitor Stand



- **CDPM 800S** - Twin 5.25", 800K Double sided 40/80 track switchable disc drives mounted in an attractively finished Beige colour plinth for the BBC B & Master 128K micros. Supplied complete with integral power supply, cables and Utilities disc. The mains switch with neon On/Off light indicator, and the two 40/80 track switches are mounted on the front panel for ease of use. £139
- **DP35 800** - Same as above except one disc drive is a 5.25" and the other is 3.5". £135

Plastic Library Cases



- DLC1 - holds 5 x 3.5" Discs £1.50
- DLC2 - holds 10 x 3.5" Discs £1.90
- DLC3 - holds 5 x 5.25" Discs £1.60
- DLC4 - holds 10 x 5.25" Discs £2.00

Disc Albums

- Attractively finished in leather-look PVC Vinyl
- DW1 - holds 6 x 3.5" Discs £2.50
- DW2 - holds 6 x 5.25" Discs £3.00
- DW3 - holds 20 x 5.25" Discs £3.50
- DW4 - holds 40 x 3.5" or 5.25" Discs £4.50

Cleaning Kits & Accessories

- 5.25" Disc Cleaning Kit £4
- 3.5" Disc Cleaning Kit £4
- PC Cleaning Kit £7
- Professional PC Cleaning Kit £12
- Aerosol Dust Spray Can £3
- Servisol Foam Cleaner Can £3
- Antistatic Aerosol Spray £3

Acorn & Watford DFSs

- Watford DFS Kit complete £42.00
- DFS Manual (comprehensive) £6.95
- Acorn DNFS ROM £17.00
- Acorn ADFS ROM only £25.00
- Acorn 1772 DFS ROM Kit £42.00
- Acorn DFS Kit complete £42.00

Watford's Mk II 1772

Single/Double Density DFS

Many of our customers have wanted to use our superior DDFS and Acorn ADFS together. Now our Mk II DDFS Board with its 1772 Disc Controller has been adapted to allow the use of Acorn ADFS as well. It also has all the commands of the Acorn's 1772 DFS, plus many more added features.

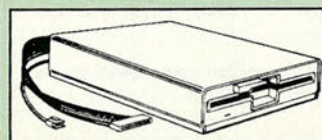
- Complete Kit Special Price £39
- DDFS Manual (No VAT) £6.95

Quality Disc Drives from Watford

All our Disc Drives are Double Sided and will operate in both Single and Double Density modes. All 5.25" Disc Drives are 40/80 track switchable. For ease of use, the switches are front mounted. Follow the trend with a Watford plinth. (Turn to the 6th page of our advert for the Plinths).

PS. All our 5.25" Disc Drives with PSU are compatible with the Compact Micro. All you require is our special Disc Drive cables designed by us.

"Test Bureau Approved for Use in Education"



Our Disc Drivers conform to BS415

Disc Drive without PSU

- **CLS400S:** Single, 40/80 track, 400K Double sided Drive £75
- **CLD800S:** Twin, 40/80 track, 800K Double sided Drives £138

Disc Drive with PSU

- **CS400S:** Single, 40/80 track, 400K Double sided Drive £85
- **CD800S:** Twin, 40/80 track, 800K Double sided Drives £149

TEX EPROM ERASERS

TEX Eraser operates following the manufacturers specifications to give maximum possible working life to EPROMs by not erasing too fast. Erases up to 10 EPROMs. Has an automatic safety cut-off to switch off UV lamp when opened. £34

Spare UV Lamp £12

Credit Card Hotline

0582 745555

Continued → →

Microvitec Monitors

- 1451 - Medium Resolution **#£199**
- Cub3000 Medium Res for A3000 **#£195**
- Dust Cover for Microvitecs **£5.50**
- Touchtec 501 Touch Screen **£239**
- Touchtec 3000 (For RiscOs 2 only) **£POA**
- CubScan 1440 14" **£389**
- CubScan 1450 15" FST **£POA**

#3 years parts & labour warranty

MultiScan Monitors

| | | | |
|--------------|------|-----------------|------|
| Eizo T240i | £483 | Pan TX1713MAB | £616 |
| Eizo F340i-W | £625 | Phil 4CM4270 | £289 |
| Eizo F550i-W | £899 | Phil 7CM3279 | £249 |
| Phil 7CM5279 | £269 | Taxan 787 | £229 |
| NEC 2A-N | £274 | Taxan 787LR | £239 |
| NEC 3FG | £360 | Taxan 789LR | £289 |
| NEC 3FGe | £449 | Taxan 795-PC | £465 |
| NEC 4FGe | £479 | Taxan 875+LR | £737 |
| NEC 5FG | £899 | Panasonic C1381 | £199 |
| NEC 5FGe | £789 | | |

Panasonic monitors carry 2 years on-site maintenance warranty.

Aries AlphaScan Monitor

Its multiscan circuitry provides automatic adjustment for frequencies between 31 and 56KHz horizontal, and 43 and 70KHz vertical. Its 0.28mm dot pitch high resolution tube provides super sharp text graphics, while a high speed (70/72 Hz) refresh rate provides a flicker-free display easing the eye strain. The VIDC Adaptor supplied with the monitor allows high resolution operation in all screen modes.

£299

- Aries Alphascan 17" Plus **£585**
- Aries 6000 15" Flat Screen, 0.28mm non-glare 1024 x 768 non-interlaced (70Hz) Microprocessor controlled **£395**
- Aries 7000 17" Flat Screen, 0.28mm non-glare. Maximum resolution 1280 x 1024 non-interlaced. Microprocessor controlled **£625**

Philips Monitors

- BM7502 12" Hi-res Green **£88**
- CM8833ii 14" med. res Colour. Ideal for BBC B; Master & Archimedes **£192**

Pace External Modems

All Pace modems are BABT Approved and include a 5-year Parts & Labour Warranty.

- Linnet Plus - Intelligent, V21/23 Auto Dial/Answer, Hayes Compatible **£89**
- Linnet 24 - Intelligent, V21/23, V22, V22bis, Auto Dial/Answer, Hayes Compatible **£142**
- Linnet Quad - Intelligent, V21/23, V22, V22bis, V42, MNP 4&5 Auto, Dial/Answer, Hayes Compatible **£175**
- Linnet 32 - V32, V22bis, V42bis, V42, MNP 4&5 **£249**
- Linnet 32+ - V32bis, V32, V22bis, V22, V32, V21, V42bis, V42, MNP 4&5 **£299**
- Ultralink Quad - V22bis, V22, V21, V23, V42bis, V42, MNP 4&5 Upgradable to Ultralink 32 Plus Spec. **£199**
- Ultralink 32+ - Intelligent, V32bis, V32, V22bis, V22, V21, V23, V42bis, V42, MNP 4&5 wire leased line with P.S.T.N. dial backup and auto restore **£429**

Archi Comm. Software

- Hearsay **£69**
- Arc Comm **£45**
- RS-232 Cable for above modems **£9**

Printer Leads

- BBC Centronics 4' £5; 6' £6
- Archi Parallel 2m £5; 5m £9; 10m £13
- PC Parallel 2m £5; 5m £9; 10m £13
- 25 pin D Male/Male 2m £5; 5m £10
- Centronics Double Ended 4' £5; 6' £6
- 5m £10; 10m £14
- RS232 Leads Various **£POA**

Integrex InkJet Printers

- Paper Roll for Integrex 132 **£6.50**
- BBC Screen Dump Software **£10**
- Colour Cartridge **£23**
- Black Cartridge **£14**
- 100 A4 OHP transparencies **£55**
- Colour Jet 2000 **£599**
- Betajet Ink Jet Printer **£185**
- Betajet Cut Sheet Feeder **£43**
- Integrex Colourjet Series 2 **£335**
- Auto Sheet Feeder for Series 2 **£45**

Star Printers

| Printer | CSF | Ribbon |
|---------------|-------|----------|
| LC15 | £186 | £135 £5 |
| LC20 | £102 | £60 £4 |
| LC100C | £117 | £65 £9 |
| LC24-15 | £242 | £135 £5 |
| LC24-100 | £142 | £69 £5 |
| LC24-20 Mk2 | £170 | £65 £5 |
| LC24-200C | £205 | £65 £12 |
| LC200 C | £151 | £65 £12 |
| Star Jet SJ48 | £169 | £43 £16 |
| SJ144C | £399 | - - |
| XB24-200C | £322 | £80 £12 |
| XB24-250C | £389# | £139 £12 |
| ZA-200C | £258 | £89 £12 |
| ZA-250C | £324# | £139 £12 |

Includes 12 months on-site warranty

- Black Ribbons for Colour Printers **£5**
- Serial 8K l'face LC10/15/24/200 **£52**
- 32K Buffer LC/XB24-10; 15; 200 **£52**
- Star/Archi Colour Printer Driver **£15**

NEC Printers

| Printer | CSF | Ribbon |
|---------|------|---------|
| P22Q | £190 | £59 £6 |
| P32 | £255 | £59 £6 |
| P62 | £339 | £79 £8 |
| P72 | £395 | £115 £8 |
| P90 | £577 | £115 £8 |

- Jetmate J400 **£169**; • Jetmate J800 **£249**

- Black Ribbons P20; P32 **£6**
- Ribbons P60/70/P90 Black £8; Colr **£14**
- P60/70 Colour Option Kit **£59**
- CSF for P20 £59; P60 £89; P70 £89

Panasonic Printers

| Printer | CSF | Ribbon |
|-----------|-------|-----------|
| KX-P1123 | £129 | £49 £7 |
| KX-P1170 | £98 | £59 £6 |
| KX-P1624 | £267 | £126 £8 |
| KX-P1654 | £334# | £126 £8 |
| KX-P1695 | £270 | £126 £6 |
| KX-P2123M | £148 | £69 £8 |
| KX-P2124 | £220 | £89 £7 |
| KX-P2180M | £128 | £69 £7 |
| KX-P2624 | £272# | £126 £8 |
| KX-P2023 | £158 | £155 £POA |

FREE - Printer lead with every Panasonic printer listed above

Includes 12 months on-site warranty

- Dustcover for 80 column printer **£6**
- Serial Interface for above Printers **£46**
- Black Ribbons for P1081, 1180, 1124 **£7**
- Brown, Blue or Red Ribbons for KX-P1081/1592/1595/1695 **£9 each**
- 32K Buffer for above Printers **£16**

Colour Kit for KX-P2180; KX-P2123 and KX-P2124 **£37**

Laser Printers

All Laser Printers (excluding HP Lasers) include 12 months on-site maintenance

| | | |
|------------------------------|--------|-------|
| Brother HL4-PS Postscript | 4ppm | £965 |
| Brother HL6 - NEW - | 6ppm | £427 |
| Brother HL10-PS | 10ppm | £1265 |
| Brother HL10-DV | 10ppm | £1016 |
| Brother HL10-DPS | 10ppm | £1435 |
| Canon LBP4 LITE | 4ppm | £478 |
| Canon LBP4 + 1.5M RAM | 4ppm | £639 |
| Canon LBP-8 Plus IIR | 8ppm | £1420 |
| Canon LBP-8 IV 600DPI | 8ppm | £932 |
| Epson EPL-4300 | 4ppm | £520 |
| Epson EPL-5000 | 6ppm | £439 |
| Epson EPL-5200 - NEW - | 6ppm | £525 |
| Epson EPL-7500 PS | 6ppm | £1135 |
| HP Laserjet 4 ML | 4ppm | £757 |
| HP Laserjet 4 | 8ppm | £1049 |
| HP Laserjet 4L - NEW - | 4ppm | £459 |
| HP Laserjet 4M PS | 8ppm | £1369 |
| HP Laserjet 4Si | 16ppm | £2199 |
| HP Laserjet 4Si MX 1200 DPI | 16ppm | £3325 |
| NEC Silentwriter S62P #PS | 6ppm | £990 |
| NEC Silentwriter S102 | 6ppm | £893 |
| NEC Silentwriter2 290 | 8ppm | £1125 |
| NEC Silentwriter 290P PS | 8ppm | £1469 |
| OKI OL400E | 4ppm | £419 |
| OKI OL410 | | £589 |
| Panasonic KX-P4410 | 5ppm* | £445 |
| Panasonic KX-P4430 | 5ppm* | £579 |
| Panasonic KX-P4451 DB | 11ppm* | £839 |
| Panasonic KX-P4455 PS | 11ppm* | £1249 |
| Star LP-4 Post Script | 4ppm | £759 |
| Star LS-5 | 5ppm | £473 |
| Star LS-5 EX (RISC Based) | 5ppm | £595 |
| Star LS-5 TT True Type + Mac | 5ppm | £739 |
| Star LP-8 III Postscript | 8ppm | £1125 |

- HP Laserjet 4L 3 years on-site **£100**
- HP Laserjet 4Si 3 years on-site **£505**
- HP Laserjet 4/4M 3 years on-site **£170**

Laser Toners

| | | | |
|------------------|-----|------------------|------|
| Canon 2, 3 & 4 | £52 | EPL 71/7500 | £117 |
| KX-P4420/50/55 | £20 | HP4/4M | £72 |
| Canon LBP8-IV | £75 | EPL 8100 | £117 |
| KX-P4420/30 | £30 | HP Laserjet 4L | £59 |
| Canon 8/Star LP8 | £59 | Qume Crystal (3) | £84 |
| NEC SWriter | £84 | OKI OL400/800 | £21 |
| Epson GQ | £12 | Star LP4 | £52 |
| HPI/D, IIR/D | £60 | OKI OL400e | £17 |
| EPL 40/41/4300 | £55 | Star LS5 | £69 |
| HP IIP, IIR | £54 | VM800 8K pages | £99 |

Laser RAM Upgrades

| Type | 1M | 2M | 4M |
|--------------|------|------|-------------|
| IIP; IIR | £49 | £80 | £132 |
| II & IID | £60 | £96 | £142 |
| LJ4/4M | £69 | £75 | £1758M/£279 |
| EPL4100 | - | £120 | - 512K/£52 |
| KX4420/50i | £59 | £89 | £149 |
| NEC S62/S102 | £99 | £180 | - |
| Star LBP | £139 | £275 | - |
| Laserjet 4L | £75 | - | - |

Jetpage Postscript Cartridge

- HP IIP/IIR **£225**
- IID & III **£227**

Various Add-Ons

- Laserjet Appletalk Interface **£135**
- HP Adobe Postscript + Cartridge **£359**
- Pacific Page Postscript **£259**
- HP Premier Font Collection **£28**
- Laserjet Various Font C'tridges from **£45**
- HP Postscript Module for LJ4 **£270**
- Laserjet 4 Powered envelope feeder **£199**
- Jetdirect Ethernet Card for Laserjet IIISi/4/4Si **£359**
- 500 Sheet paper cassette (3rd Bin) **£205**
- HPIIP/IIP Lower Cassette Tray **£115**
- Canon LBP-4 Lower Cassette Tray **£96**
- Ozone Filter P4420 £9 • P4450/55 **£20**



HANDS-ON OPEN DAY

We are proud to announce that date of our forthcoming Hands-On Open day on Sunday 3rd October 1993, to be held at our High Tech HQ in Luton. This is the latest in a successful series of Open Days held by Watford attended by over 2,000 people.

Also, on Saturday 2nd, the day before the big Open Day, Watford will be holding a series of presentations on the Acorn Headstart scheme aimed at students interested in purchasing an Acorn machine. Please call to book.

For further information, contact Richard Overfield or Keith Archer on (0582) 48 77 77.

Citizen Printers

| | | | |
|-----------|------|------------|------|
| 120D+ | £94 | Swift 200 | £178 |
| PN-48 | £179 | Swift 240 | £200 |
| Swift 90 | £132 | Swift 240C | £212 |
| Swift 90C | £198 | | |

2 years parts and labour warranty on all above Citizen Printers.

- Swift 24 Ribbons; Black £4; Colour **£13**
- Cut Sheet Feeder for 80 col. printers **£75**
- Citizen 120D Ribbons **£3.50**
- Archi Colour Printer Driver **£15**

Hewlett-Packard Printers

| | | | |
|-----------------|------|-------------------|-------|
| DJ500 Colour | £242 | DeskJet 1200C | £1045 |
| DeskJet 510 | £199 | DeskJet 1200C PS | £1452 |
| DJ550 Colour | £399 | Deskwriter 550C | £459 |
| DJ Portable | £175 | PaintJet XL300* | £1675 |
| Deskwriter | £229 | PaintJet XL300 PS | £2619 |
| Deskwriter 500C | £349 | Quiet Jet Plus | £299 |

* Includes 12 months on-site warranty

3 years on-site maintenance available as follows:
DeskJet & DeskWriter mono **£55**
DeskJet & DeskWriter colour **£65**

- PaintJet Cartridge Black **£17**; Colour **£27**
- DJ Portable CSF **£49**; Carrying Case **£49**

Hi-quality InkJet Paper A4 90gms 500 Sheets £9

Desk Jet 500 Accessories

- Ink Cartridges Black **£16**; Colour **£23**
- High Capacity Ink Cartridges Black **£25**
- Ink Refill Double Pack (JetFill) **£10**
- Ink Refill High Capacity (Jet Fill) **£16**
- DeskJet Turbo Driver **£45** (only £39 when purchased with printer)
- Archi - DJ550 Colour Printer Driver **£14**
- Epson FX Emulation Cart. (500 mono) **£45**
- IBM Proprinter Emulation Cartridge **£59**
- Wordperfect Cartridge **£89**
- DJ 500 Dust Covers **£6**
- 636G 50 x Transparencies A4 **£40**
- 636J 50 x Glossy Paper A4 (also XL) **£40**
- 630Z 50 x Cut Sheet Paper A4 **£15**

Plug In Font Cartridges for DJ 500

- 22706B - Prestige, Elite, Line Draw **£55**
- 22706C - Letter Gothic & HP Line Draw **£56**
- 22707P - Proprint Emulation Cartridges **£57**

HP PaintJet/XL Accessories

- 630P 200 Z-Fold paper 8.5 x 11 **£14**
- 630Q 50 Transparencies 8.5 x 11 **£39**
- 630S 50 Transparencies A4 **£40**
- 630Y 200 Cut Sheets 8.5 x 11 **£14**
- 631Y 200 Cut Sheets A4 **£18**

Epson Printers

| Printer | CSF | Ribbon |
|------------|------|--------|
| FX870 | £265 | £39 |
| FX1170 | £335 | £69 |
| LQ100 | £132 | £4 |
| LQ570+ | £201 | £39 |
| LQ870 | £355 | £47 |
| LQ1060 | £585 | £155 |
| LQ1070 | £310 | £69 |
| LQ500 | £204 | £4 |
| LQ1170 | £434 | £69 |
| LQ2550 | £669 | £360 |
| LX100 | £114 | £4 |
| LX400 | £92 | £69 |
| LX850+ | £134 | £69 |
| LX1050 | £203 | £125 |
| SQ870 | £419 | £170 |
| SQ1170 | £555 | £155 |
| SQ2550 | £669 | £23 |
| Stylus 800 | £219 | £10 |

Epson RS232 Interface
 Standard £28; +8K Buffer £75
 • LQ100 Tractor Feed £29
 • FX850/LQ800/850 Tractor Feed £69
 • FX/LQ1050 Tractor Feed £85
 • LQ2500/2550 Tractor Feed £90
 • Dust Covers for 80 col. printers £6
 • Stylus 800 Transparencies (50) £35

Canon Bubblejet Printers

| Printer | CSF | 2nd Bin | Ink Cart |
|---------|-------|---------|----------|
| BJ10SX | £165 | £43 | £16 |
| BJ200 | £244 | £43 | £16 |
| BJ230 | £280 | £43 | £16 |
| BJ300* | £305 | £88 | £12 |
| BJ330* | £369 | £92 | £12 |
| BJC800C | £1219 | £43 | £16 |

• BJ10E/10EX/10SX/200/230 Jumbo Ink Refill Pack (Jetfill Twin Pack) £12
 • Optional battery pack for BJ10EX/SX £33

* Includes 12 months on-site warranty

Professional Printer Stand

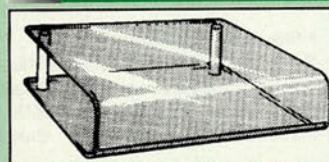


The professional printer stand takes hardly more space than your printer. Due to the positioning of the paper feed and re-fold compartments, ie. one above the other, the desk space required for your printer functions is effectively halved. Its ergonomic design ensures smooth paper flow and automatic refolding.

80 Column version £16

132 Column version £25

Perspex Printer Stand



Give your computer system a touch of Class with our elegant smoke finished Perspex Printer Stand.

80 Column version £14
 136 Column version £18



24 Hour Credit Card Order Line
 (0582) 74 55 55 / 48 77 77

Universal Printer Sharers

Connect up to 4 Micros to 1 Printer or 4 Printers to 1 Micro with our combined Share/Changer switch boxes.

Standard Low Cost Sharers

| Connects | Serial | Parallel |
|----------|--------|----------|
| • 2 to 1 | £8 | £9 |
| • 3 to 1 | £11 | £12 |
| • 4 to 1 | £15 | £16 |

Professional Sharer Units

| Connects | Serial | Parallel |
|----------|--------|----------|
| • 2 to 1 | £12 | £13 |
| • 3 to 1 | £15 | £17 |
| • 4 to 1 | £24 | £26 |

Auto Printer Sharer Switch

| Connects | Serial | Centronics |
|----------|--------|------------|
| • 2 to 1 | £27 | £29 |
| • 4 to 1 | £44 | £45 |
| • 8 to 1 | £75 | £75 |

256K Multi Spooler

These Parallel Auto Printer Sharer Switches have built-in 256K Buffers.

| | | | |
|--------------|-----|--------------|------|
| • 2 In/2 Out | £99 | • 4 In/2 Out | £115 |
| • 8 In/1 Out | | | £149 |

(Cables for all printer switches are from £5 each. Please specify the type required when ordering.)

Compact Converter Unit

| | |
|---------------------------|-----|
| Serial Parallel to Serial | £32 |
|---------------------------|-----|

Listing Paper

| | |
|---|-------|
| • 1,000 Sheets 9.5" x 11" Fanfold | £7 |
| • 2,000 Sheets 9.5" x 11" Fanfold | £11 |
| • 1,000 Sheets 9.5" x 11" NCR 2 Part Fanfold | £21 |
| • 1,000 Sheets 15" x 11" Fanfold | £9 |
| • 2,000 Sheets 15" x 11" Fanfold | £16 |
| • 1,000 Sheets true A4 Fanfold Paper 70gms | £11 |
| • 2,000 Sheets true A4 Fanfold Paper 70gms | £21 |
| • 500 Sheets A4 80gms Bond | £3.50 |
| • 500 Sheets A4 90gms Cartridge for Ink Jet/Laser printer | £9 |

(All our Fanfold paper is Micor perforated leaving a smooth clean edge when the tractor feed strips are detached.)

Cross Over Manual Switch

| | |
|---------------------|-----|
| 2 In/2 Out Parallel | £29 |
| 2 In/2 Out Serial | £28 |
| 3 In/2 Out Serial | £36 |

Compact Converter Unit

| Type | Ribbons | Dust Covers |
|-----------------------|---------|-------------|
| BBC B/BBC Master | £6 | £6 |
| Archimedes Micro pair | £9 | £9 |
| Citizen 120D | £3.25 | £6 |
| EX800/1000 | £6 | £6 |
| RX/FX80/85/800/MX80 | £2.95 | £6 |
| FX/MX/RX100/1000 | £3.95 | £6 |
| Kaga/Taxan KP810/815 | £6 | £6 |
| LQ400/500/550/800/850 | £5.50 | £6 |
| LQ1050/LQ2500 | £12 | £6 |
| LX400/800/850 | £3.50 | £6 |
| M1009/GLP | £2.95 | £6 |
| NEC P2200 | £4.50 | £6 |

Dust covers for most 80 column printers available at £6 each.

Printer Labels

(On continuous Fanfold backing sheet)

| | |
|------------------------------|-------|
| 1,000 90 x 36mm (Single Row) | £4.50 |
| 1,000 90 x 36mm (Twin Row) | £4.60 |
| 1,000 90 x 49mm (Twin Row) | £4.95 |
| 1,000 102 x 36mm (Twin Row) | £4.70 |

Laser Printer Labels on A4 Sheets

| | |
|--------------------------------|--------|
| 3750 - 70 x 29mm (3 Rows x 10) | £15.50 |
| 2400 - 70 x 37mm (3 Rows x 8) | £15.25 |

Psion Series III



| | |
|--------------------------|------|
| • Series 3 Computer 128K | £108 |
| • Series 3 Computer 256K | £159 |
| • Desk Stand | £15 |

RAM Solid State Discs (SSD)

| | | |
|------------|------------|------------|
| • 128K £48 | • 512K £97 | • 1Mb £199 |
|------------|------------|------------|

Flash Solid State Disc (SSD)

| | | |
|------------|------------|------------|
| • 128K £30 | • 556K £48 | • 512K £79 |
| • 1Mb £139 | • 2Mb £199 | |

Communications

| | |
|------------------------------|-----|
| • Parallel Interface Link | £25 |
| • RS 232 Serial Link for PC | £58 |
| • RS 232 Serial Link for Mac | £59 |

Various

| | |
|------------------------------|-----|
| • Mains Adaptor 9V AC | £12 |
| • Spreadsheet | £59 |
| • Professional Finance | £42 |
| • Spelling Checker/Thesaurus | £42 |

Commander Joystick

- Connects directly to BBC Analogue port
- Fully compatible with all BBC Joystick controlled games
- Switchable springs allow selection of floating or centering operation
- Trim adjusters for both X and Y axes for fine centre adjustment
- Convenient stick mounted fire button with additional base buttons.

Price: £15

Beeb PC (BASIC)

Designed to program authors to convert BBC programs to run on IBM PC's.

Price: £38

Beeb DOS

Allows IBM PCs/Compatibles to read Acorn format discs £39

WATFORD CATALOGUE

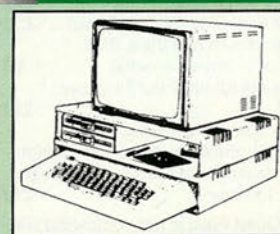
200 Pages
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 Catalogue/
 Technical Guide
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 for your FREE copy

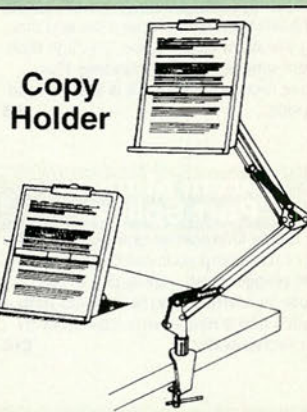
Plotters

| | | | |
|---------------------------------|-------|-----------------|-------|
| • DXY1100 | £650 | • DXY1200 | £835 |
| • DXY1300 | £1049 | • Sketchmate A4 | £349 |
| • Sketchmate A3 | | | £495 |
| • Roland Plotter Fibre Tip Pens | | | £7.50 |
| • HP7440AU | £665 | • HP7475AU | £899 |
| • HP7570A | £POA | • HP7575AU | £2529 |

Plinths for the BBC Master and A3000



- Single 490 x 310 x 105mm £14
- Double 490 x 310 x 210mm £27
- A3000 Single Plinth (very sturdy & precision made), has a slot on the left for the switch & cut out on the right for 3.5" Disc Drive £15



Available in 2 full A4 versions, desk resting and shelf clamping. Paper is held firmly by means of a plastic retaining ruler and a clip grip.

- Desk Top £8;
- Angle Poise £12

NEW

Copy holders as above but with a battery operated, remote controlled cursor/ruler. (By hand or foot pedal).

Batteries 2 x AA not included.

- Desk Top £15;
- Angle Poise £20

Psion Series III

Fitted in place of your normal mains plug, this device protects your equipment (and data from corruption), against mains high voltage transient spikes/surges caused by lightning or thermostats switching.

Protection for only £8.50

Cross Over Manual Switch

4-way top quality mains trailing sockets. Supplied wired up with mains plug ready for use. Can be screwed to floor or wall if required. Very useful for tidying up all the mains leads from your peripherals. £9.50

Cross Over Manual Switch

A 4-way mains distribution unit as above with a built-in Surge Arrester, providing protection for your complete computer/Hi-Fi system. £16

Continued → → →

QUEST MOUSE Mk III

- Quest Mouse III & Quest Paint **£39**
 - Quest Mouse III, Quest Paint, AMX Stop Press & Pagefont **£59**
 - Quest Mouse III only **£25**
 - Quest Paint Software only **£23**
 - Quest Font Disc (22 Text Fonts) **£15**
 - Quest Mouse Mat (Red, Blue or Green - please specify) **£3**
 - Conquest (Quest Paint Extension) ROM **£24**
 - Quest Colour Dump Disc - This new software allows you to print direct from Quest Print to your Integrex Colour Printer **£18**
- (PS. Quest Paint is not compatible with BBC Compact)

Quest Paint is the winner of the BBC Acorn User 1990 Award for the Best Art/Graphics Software.

Mouse Cleaning Kit

To obtain trouble free operation and prolong the life of your mouse, the high tech rodent requires regular cleaning. Our deluxe mouse cleaning kit is ideal for the purpose. **£3**

Archi Mouse Port Splitter

Our handy little splitter unit eliminates the risk of damaging your micro due to constant plugging and unplugging of the mouse by allowing you to connect both a joystick and a mouse simultaneously to your Archimedes. **£10**

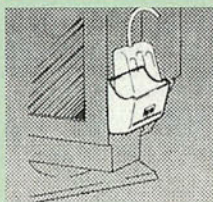
Mk III AMX MOUSE

• AMX Mouse plus Super Art **£39**

(Please specify for BBC, Master or Compact)

- AMX MOUSE ONLY **£25**
- AMX SUPERART Package **£20**
- AMX STOP PRESS - A Desktop publishing software. Works with keyboard, joystick or a mouse. **£18**
- PAGE FONTS - Over 20 Fonts for use with AMX Pagemaker **£13**
- AMX DESIGN (ROM) **£23**
- AMX EXTRA EXTRA **£16**
- MOUSE MAT **£3**

WE Mouse House



Treat your mouse to a cosy Mouse House. This handy little gadget solves the problem of where to store your mouse when it is having a rest. Made of sturdy plastic, the WE Mouse House attaches to the side of your computer, monitor, disc drive, etc.

Only £3

Award Winning Wapping Editor

The Wapping Editor from Watford Electronics represents a breakthrough in Desktop Publishing for the Beeb. The package includes a 64K ROM containing ALL the software needed to get into print fast: a very sophisticated graphics module, professional quality typesetting software, a word processor, a comprehensive font editor for designing your own typefaces, and a variety of printer dumps. This mouse-driven system is designed for the BBC B, the B+ and Master computers and will take full advantage of any Sideways and Shadow RAM that may be fitted. It will run under DFS, ADFS and Network filing systems and requires as a minimum just a single 40 track drive.

Wapping Editor Software Pack £39
Wapping Editor plus Mouse £59

(Wapping Editor only works with Master Compact if a Mertec Expansion box is fitted).

Wapping Art Disc

Over 250K of clip art to cut and paste into your Wapping Editor pages. Pictures include maps, transport, people, media, sport, games, etc. Two 'ratio' screens for use with hi-res and rotated A5 pages to ensure images are not distorted when printed out. **£15**

Wapping Font Disc 1

Sixteen additional fonts, including smaller version of Oberon and Daisy and two new sizes of the standard font for the Wapping Editor. Also included are two Mode O screens containing giant 'headline' fonts to cut and paste to create extra smooth headlines. Supplied complete with instructions. **£12**

Wapping Font Disc 2

This new addition to our Wapping range of DTP software provides you with additional 23 fonts for the Wapping Editor DTP pack. (80 track discs only). **£13**

32K Shadow Ram Expansion Card

A MUST FOR WORD PROCESSING

Simply plug the ribbon cable plug into the 6502 socket and gain a massive 32K of extra RAM.

- "VIEW" Wordprocessor users can now type in letters in 80 columns and have up to 28K bytes free - 5 times as much as normal.

- In WORDWISE (or WORDWISE PLUS), preview in 80 columns with the full 24K of text memory. This product is recommended as an ideal complement by Computer Concepts.

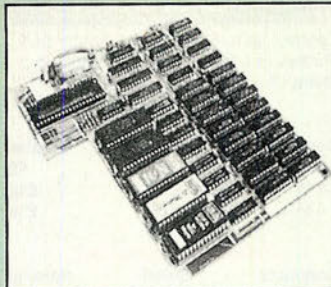
Only £45

ROM Cartridges for the BBC Master

Will accept the larger Piggy Back ROMs like Interword, Quest, etc.

- Twin **£9**; • Quad **£14**

ROM/RAM Card



- No soldering required to fit the board
- Compatible with BBC B
- Total number of ROMs increased from 4 to 8
- Up to 8 banks of sideways RAM (dynamic)

PRICES

- ROM/RAM Card with 32K DRAM **£39**
- ROM/RAM card with 64K DRAM **£52**
- ROM/RAM card with 128K DRAM **£83**

OPTIONAL EXTRAS

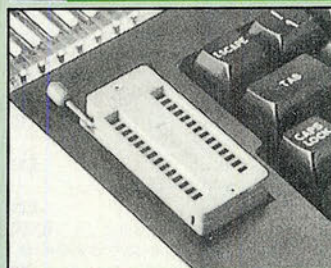
- 16K plug-in Static RAM kit **£8**
- 16K DRAM for Upgrade **£13**
- Battery backup **£3**
- Read and Write protect switches **£2 each**

Complete ROM-RAM card with all options fitted **£99**



24 Hour Credit Card Order Line
dial (0582) 74 55 55

Sideways ROM ZIF Socket System



Allows you to change your ROMs quickly and efficiently, without having to open the lid. The ZIF socket is located into the ROM Cartridge's position. It is very simple to install. No soldering required. Also included in the price is a see-through storage case with antistatic lining, which allows you to store 12 ROMS. **£18**

User Port Splitter Unit

Gone are the days when you had to plug and unplug devices from the User Port. This extremely usefull little device allows you to connect two devices simultaneously to the BBC B & Master User Port.

Excellent Value at £22

Acorn Speech Synthesizer package complete for the BBC B Microcomputer

Special Offer £6

ACORN to PC

Stop the Confusion!

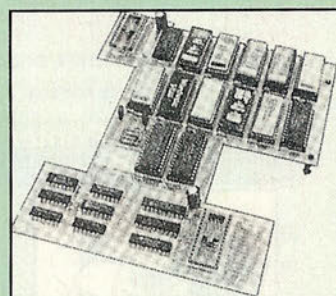
Do you have to use both Acorn computers and PC's? Would you like to use your Archimedes or A3000 in PC-emulation mode but are unsure of the new commands?

Although Acorn machines (such as the BBC B, the Master, the Archimedes) are mainly used in education, most commercial computers use other operating systems, particularly MS-DOS. As a result, school computer users are at a disadvantage when moving into 'business' computing. PC's and other commercial computers use MS-DOS as the operating system, so commands for formatting, copying, backing up, printing and the modern are not the same. Even file names are written differently! And did you know that there is one Acorn command which, if used in MS-DOS, wipes everything in the current directory?

'ACORN TO PC' enables you to change over painlessly. It shows clearly and quickly how, why and where the two systems (Acorn and MS-DOS) differ. As with a foreign language dictionary, you can use the book to transfer either way - from Acorn to MS-DOS, or from MS-DOS to Acorn.

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Solderless Sideways ROM Socket Board



- Increases your BBC Micro's ROM capacity from 4 to 16.
- **No soldering required.**
- Socket 14 takes two 6264 RAM chips.
- Read protect to make RAM "Vanish" allows recovery from ROM crashes.
- Battery backup option for RAM chips.
- Supplied ready to fit with comprehensive instructions.

Price: Only £32

Battery Backup fitted **£35**

Battery Backup only **£3**

16K Sideways RAM **£8**

- Sideways RAM Utilities Disc for Solderless ROM Board. Includes the options to load and save ROM images and the facility to use Sideways RAM as Printer Buffer. **Only £8**

Convert two single Disc Drives into one

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Dual Drive with this simple external unit (suitable for Disc Drives with PSU. For Disc Drives without PSU, you will also require Watford Power Duck, see below). **£14**

Watford POWER DUCK £8

BBC Micro Education Software

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| – French programmes for beginners | £29 |
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| – Learning Punctuation for 7-13 years | £15 |
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|---|-----|
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| Acorn Basic 2 | £22 |
| Acorn DNFS | £17 |
| Acorn OS B+ | £25 |
| Acorn OS 1.2 | £14 |
| Beebmon | £22 |
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| Wordwise Plus/Wordaid | £38 |
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Allows IBM Compatibles to read BBC and Archimedes format discs. **£39**

Beeb PC Basic

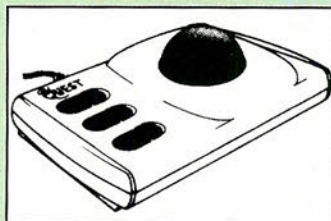
A version of BBC Basic for IBM compatible machines. **£38**

Spares for the BBC Micro

| | |
|-------------------------|-------|
| UHF Modulator | £4 |
| Speaker & Speaker Grill | £5 |
| Keyswitches | £1.50 |
| 16Mhz Crystal | £2 |
| 32.768Mhz Crystal | £2 |
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| | |
|-----------------------|-----|
| AAA0120 – Archimedes | £26 |
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BOOKS (No VAT on Books)

| | |
|---|--------|
| 15 Hr Wordprocessing BBC/View | £6.95 |
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| Assembly Language Quick Ref. | £21.95 |
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| Operating Manual for BBC | £5.95 |
| DTP on the Archimedes | £12.95 |
| Epson RX/FX Printer Commands Revealed | £5.95 |
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| Impression – Dab Hand Guide | £14.95 |
| Impression II – A Dabhand Guide | £14.95 |
| ISO-PASCAL Reference Manual | £9.95 |
| Master 512 Guide – Dabs Press | £9.95 |
| Master Operating System | £12.95 |
| Master Reference Manual – Advanced | £10.00 |
| Mouse User Guide to BBC Micro – the Complete | £5.95 |

| | |
|---|--------|
| Example Programs on Disc for above | £4.95 |
| Mysteries of Disc Drives & DFS Revealed | £4.95 |
| PASCAL Programming | £10.95 |
| RISC OS Style Guide | £9.95 |
| RISC Technical Manual 260pg | £14.95 |
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Both printers are supplied with Computer Concepts' super-fast TurboDriver printer drivers - printing and returning control on average between three and ten times faster than the standard Acorn drivers or the Ace PROdrivers. The RISC OS 3 versions of the TurboDriver also support rotated text and sprite printing, multiple printer icons on the icon bar and full PostScript style control over halftone screen density, screen angle and screen type. They can also handle 24 bit CMYK colour separation and so colour prints can be obtained by using colour inks and passing the paper through four times.

RISC OS 3 **Turbo** D R I V E R S

We are so confident about these printers that we will guarantee that this combination of TurboDriver and BJ-200 or BJ-230 is the fastest, highest quality printer available for less than a laser printer, or your money back.

Price:

BJ-200 £275.00 + £10.00 p&p + VAT (£334.87 incl.)

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The package includes the BJ-200 or BJ-230 printer with TurboDriver software, a cable, sample A4 sheets of special high quality inkjet paper.

THE REVIEWER'S OPINION

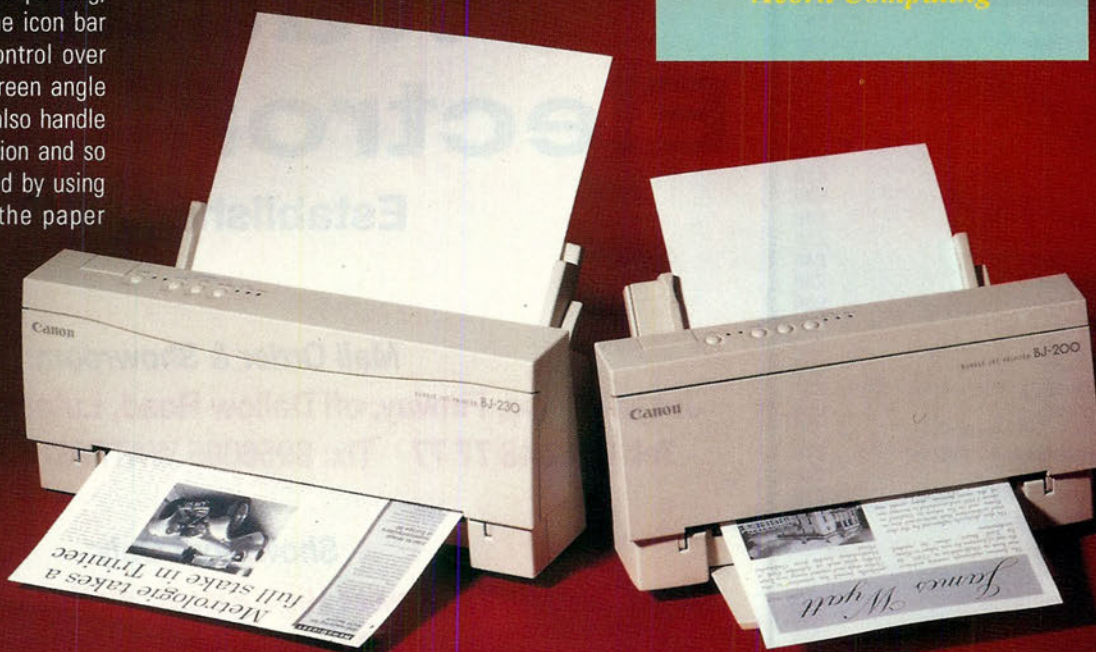
"This is probably the best inkjet printer yet. ..whether used on its own or with the excellent TurboDriver, the BJ-200 is a fast printer and the print quality is simply superb. A winner."

Acorn User

"The TurboDriver excels at its task of providing quick, high quality output.."

"..In my opinion it is well worth the money and will more than pay for itself in terms of better productivity."

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NB: The BJ-230 is only suitable for use with RISC OS 3.1. The BJ-200 can be used with both but please specify which will be used at the time of purchase. Suitable for all models of Archimedes, but a minimum of 2 Mbytes of RAM is required.

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ORDER HOTLINE FOR IMMEDIATE DESPATCH: TELEPHONE 0442 63933 or FAX 0442 231632

SHOWING OFF

With the launch of PhotoCD, two new versions of Impression and an improved Acorn DIY Replay, the show promises to be a look into the future

First some advice. Before you turn up at the Acorn World show in October, make sure you grab your camera and shoot off a roll of Kodak film. Bring the undeveloped Kodak film to the show, and you can be one of the first Acorn owners to see your pictures on CD-Rom.

If you want to get your own film developed, Kodak will take any of its own 35mm film at the show and send you negatives, prints and a CD-Rom within two weeks.

Photo CD will be launched at the show. But unlike the normal PhotoCD procedure where the film is sent away to be put onto CD-Rom, at Acorn World you can see this happen on the spot.

To process the film, a PhotoCD Imaging Workstation will be at the show, equipped with powerful scanners to scan in the developed film. For a complete review of Photo CD,



Acorn gear up for the show: here's an early concept of how its stand will look...

see next month's issue of *Acorn User*. The main Acorn stand, shown above, will have a product area and a preview area. The first will show off

the Acorn product range, whereas the latter will give a taster of what to expect over the next few months in networking and multimedia. Meanwhile, over in the technical clinic some pressing problems can be aired.

Technical Clinic

Acorn's clinic should prove to be the technical equivalent of Marjorie Proops — someone to listen while you pour out your peripheral problems, or discuss the pros and cons of different debugging techniques. With the collected brainpower of Acorn's technical department, no problem should escape unsolved.

'We will deal with a whole range of queries, from knowing what printer to buy, to which SWI call to use,' David Bell, support group manager told us. Brave comment. To handle the onslaught, Acorn has put

together a team of specialists shown overleaf. The inevitable printer query can be

For the complete guide to all the show exhibitors, the final theatre schedule and some fantastic competition details don't miss next month's *Acorn User*. As sponsors of the show we will have the complete Acorn World supplement: packed full of show launches

handled by Peter Dunn, check out Neil Kelleher for advice on the Risc OS operating system, or talk to Garry Neale, Acorn's training manager for advice on courses. They, and several other Acorn staff will be making an appearance at the show.

Of course one of the major areas the team expects to cover is technical queries on Acorn products and information on Acorn upgrades. But they will also offer advice on a whole range of other issues: what peripherals to add, the way forward for networking, how



Bring a 35mm film to the show to see your shots made up into PhotoCD format



The Science Museum will have their own stand at the Acorn World show and will be offering free child's tickets

to contact local support organisations, and so on.

The education area

The education area is taking a hands-on approach to get its message across. There will be interactive displays on networking, a key area of development for Acorn. For teachers and students who want to have their own machine, there will also be desktop advice sessions on the personal purchasing schemes Acorn Assist and Headstart, for students.

Three more interactive displays focus on primary, secondary and special needs education. With their specially-designed format,

Question time

For those of you who prefer to air your problems under the public gaze, there is also a chance to have your say in Technical Question Time. Held in the theatre at 4.20pm on Saturday, a panel of experts will attempt to tackle some probing problems.

If you have a question to put to the panel, then write to us at Acorn World Question Time, c/o Acorn User, Redwood Publishing, London, NW1 0AG. We will award a prize to the most imaginative question.



Headed by David Bell the Acorn support team aim to be the problem-busters of Acorn World. From left to right: Kerris Poole, David Bell, Sue Wall and Liz Morris (front row) Peter Dunn, Steve Arnold, Phil Colmer, Neil Kelleher, Ran Mokady, Dean Murphy, James Bye and Garry Neale (back row)

these screens should be able to answer detailed questions such as, 'what software is suitable for KS4 Mathematics,' or 'where do I get advice and training on the use of portable computers for field work.'

But to really capture a

hands-on feel, the features area goes one stage further. If you want to see pupils abseiling down a tower, while wired up to an Acorn machine, this is the area to visit. Secondary pupils will also be putting DIY Replay films to classroom use, and Key Stage 4 children will make exemplary use of the Design Processor.

Other stands

News is beginning to filter through about new software releases planned for the show. Computer Concepts has announced that they will be releasing two new versions of *Impression: Impression Style* and *Impression Professional*. The latter is sure to please all us folks at *Acorn User*, since it will include four-colour separations and a few other long-awaited features.

Meanwhile Irlam will be showing off an improved version of the *Replay DIY* software with special effects such as time lapse, which allows you to speed up cloud formations and so on.

Graphics fans will be able to see *ProArtisan 2* on the

Clares stand plus other new releases like *Plot*, *Schema 2*, and *Rhapsody 3*. For full details on every stand and all the new releases see next month's issue of *Acorn User*.

Where and when

The show is held in Wembley Exhibition Centre, Hall 1 from 29 to 31 October. Advance tickets are available from Acorn World, Exhibition Planning Services, PO Box 162, Staines, TW19 5JX.

Advance prices are as follows: Adults £5, children £3, families £15. You can also order advance tickets by contacting the ticket hotline on (0784) 483818.

Art Editors' Impression

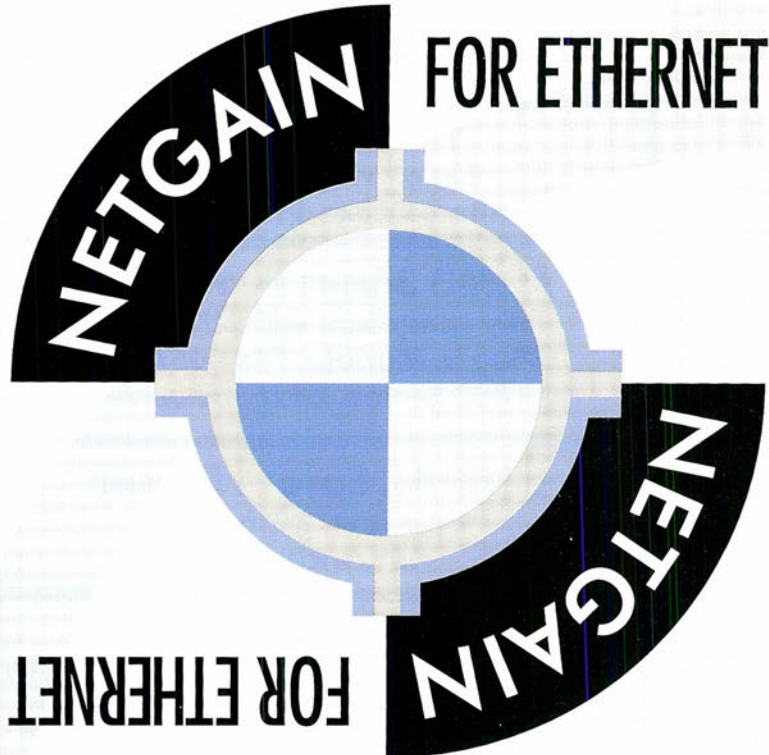
Acorn User's very own art editor, Tony Judge, shown below will be hard at work in Acorn's printing area. As our art editor his job is to take the elements of a page and lay them out in *Impression*, starting from our page template. At the show his brief will be slightly different - to lay out a guide to the publishing area of the show.

This will give visitors their first chance to see monochrome PhotoCD shots used in a DTP page, and the final pages will be output on the waiting AB Dick printing press (shown on the left).



Tony Judge offers some expert advice on *Impression* layouts


**Wembley
Exhibition Centre
Hall 1 from 29 to
31 October**



Netgain for Ethernet provides the fastest transfer rates of any network currently available on the Acorn platform. The product is designed to boost performance by huge margins when used in conjunction with Acorn's Level 4 AUN fileserver on industry standard Ethernet.

| Time taken to load these applications over an Acorn network | Level 4 Econet | Level 4 AUN Ethernet | Ethernet with Netgain |
|---|----------------|----------------------|-----------------------|
| | Seconds | Seconds | Seconds |
| Artworks | 136 | 87 | 8 |
| Maestro | 15 | 9 | 3 |
| Pipedream | 20 | 6 | 2 |
| Squirrel | 35 | 10 | 2 |

The only hardware required is an expansion card in the Netgain server, which would typically also run the Acorn Level 4 fileserver.

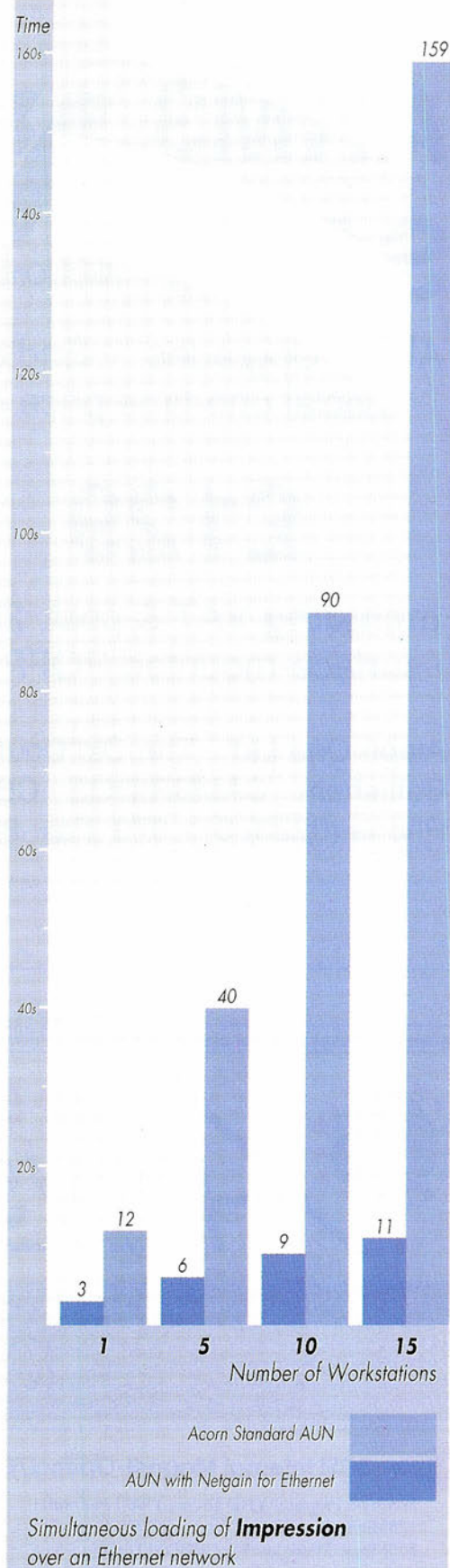
NO MORE THAN 64K OF RAM IS TAKEN FROM ANY WORKSTATION.

Standard Ethernet interfaces may be utilised.

Typical transfer rate from a standard Ethernet system is

approximately 200K/sec but Netgain achieves up to 900K/sec. In addition to this transport throughput increase, intelligent caching and a general reduction in bottlenecks result in staggering reductions in load times for typical applications.

The system manager simply copies their applications into the Netgain filer on the server, and from then on these products will automatically appear within the Resources directory viewer from the Apps icon on the icon bar, just as if the programs were in ROM.



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- SCSI and IDE drives are sold as bare drives only. Housings, mounting kits, interface cards and cables are extra.
- All SCSI devices (CDROM, tape/hard/optical drives) are for internal mounting. SCSI interfaces are extra.
- Our range of SCSI housings are suitable for mounting a wide range of SCSI devices.
- Products noted A5000 Internal mean they can be fitted to an A5000 as a second floppy drive replacement.
- Our Turbo RAM upgrades will increase memory capacity as well as doubling the speed of your computer.
- All the above prices are subject to currency fluctuations. Please telephone before placing your order.
- The products listed above are from well known manufacturers such as Conner, Hewlett Packard, Cumana, etc.
- Prices exclude VAT and carriage. Payment by Access, Visa, Cheque, Postal Order or Cash.

NEW SCSI Internal Magnet-Optical/CDROM Drives

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|--|---------|
| 20Mbyte Floptical VHD Drive (A5000 Internal) | £336.00 |
| 128Mbyte Mag-Optical Drive (A5000 Internal) | £699.00 |
| 650Mbyte Multi-Session CDROM Drive | £299.00 |

NEW Archimedes SCSI & IDE Interfaces

| | |
|--|---------|
| Cumana SCSI Interface - Ax00/A5000 | £139.00 |
| Morley Cached SCSI Interfaced - Ax00/A5000 | £179.00 |
| Cumana Internal Interface - A30x0/A4000 | £129.00 |
| Atomwide Parallel Port SCSI i/f - New Acorns | £49.00 |
| Atomwide Parallel Port SCSI i/f + Printer Port | £74.00 |
| ICS IDE Interface - Ax00 | £65.00 |
| ICS IDE Interface - A3000 | £99.00 |

SCSI Hard Drives

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|-----------|----------|
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| 120Mbyte | £210.00 |
| 170Mbyte | £234.00 |
| 250Mbyte | £300.00 |
| 380Mbyte | £536.00 |
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| 700Mbyte | £773.00 |
| 1050Mbyte | £999.00 |
| 1600Mbyte | £1499.00 |
| 2000Mbyte | £1999.00 |

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| 40Mbyte | £125.00 |
| 85Mbyte | £170.00 |
| 120Mbyte | £190.00 |
| 170Mbyte | £230.00 |
| 210Mbyte | £279.00 |
| 245Mbyte | £324.00 |
| 340Mbyte | £365.00 |
| 450Mbyte | £425.00 |
| 525Mbyte | £620.00 |
| 800Mbyte | £985.00 |
| 1050Mbyte | £1199.00 |

NEW Hard Drive Peripherals & Fitting Kits

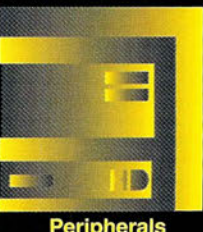
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|---|--------|
| Hard Drive Fitting Kit - A5000 | £19.00 |
| Hard Drive Fitting Kit - Ax00 | £10.00 |
| Cumana/Morley High Quality SCSI Cable | £19.00 |
| External Housings for all SCSI Devices | £79.00 |
| SCSI Tape Streamer Software | £75.00 |
| Hard Drive Backup Software | £49.00 |
| Risc Developments A5000 2nd Drive Interface | £35.00 |



Acorn Computers



IBM Computers



Peripherals



Different strokes

Richard Garrett takes a look at a package that should make life at the desktop a lot easier, at a stroke

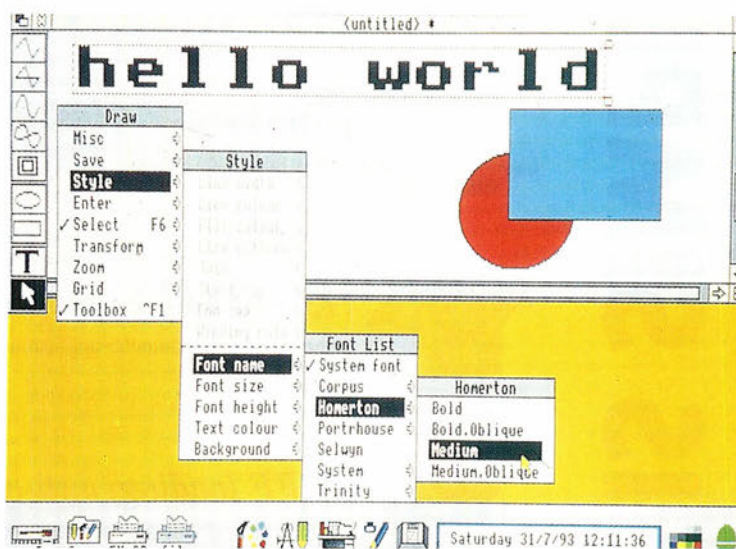
Do you ever curse software authors who hide your favourite program functions in obscure locations? Do you suffer the tedium of digging through four sub-menus to change a font? Maybe you should try *Keystroke*.

Keystroke links events on the desktop to combinations of hot keys. Its main display is a Keystroke Definition Window, which displays key combinations and the six types of event available (see box). To program a keystroke, you move the mouse into this window, press the keys you want and, when you select an event type, the window displays the relevant programming options.

In all but text and command modes, these options define the tasks or programs to which keys are assigned and specify the window or windows in which they can operate. In

these modes, you drag an icon around the screen with the mouse and select program menus to access, icons to click, or windows to move. Further settings vary with different types of event. In Icon Click mode, they specify the select or adjust button and double or single clicking. In Move Window, they set the screen coordinates to which a window will move or the relative move.

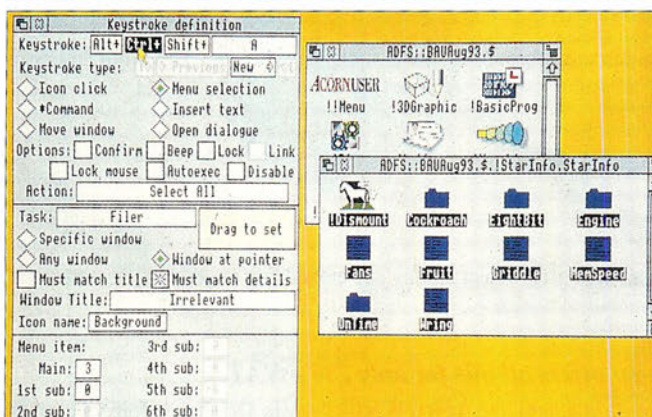
In Menu Selection and Open Dialogue modes, you specify, by counting down from the top, the menu lines you want to select. Menu Selection and Open Dialogue are the same except Open Dialogue waits for you to choose an



Have you ever wanted to do this with just a double-key press?

Features

- Hot key editor for Risc OS desktop.
- Drives six event types (Icon click, Menu selection, Open dialogue, *Command, Insert text and Move window).
- Can assign events to any key plus <ctrl> and/or <alt> and/or <shift>.
- Automated menu selection down to six layers of sub-menus
- Option to chain multiple events to a single keystroke.
- Option to save keystrokes in playback-only modules.
- Autoexecutable keystrokes performed at timed intervals.



Setting up a keystroke to select all in the filer

option and Menu Selection closes when a function is performed.

The *Command and Text Insert options both produce keys which generate strings of text. The difference between them is that, in *Command the string is sent to the command line interpreter and in Text Insert, the information is sent to the current text cursor.

The Keystroke Definition Window expands to reveal a bar into which you type up to 115 characters of text and a number of options for inserting text from icons, window bars or the system clock. *Command also features short cuts for run, load and open dir.

All keystrokes can be configured to beep or offer confirmation boxes before running a function; multiple commands can be chained together on a single keypress and individual functions can be set to run automatically at regular time intervals. To confuse Dos users, this is called autoexec. With these features and *Keystroke*'s ability to store variables which increment each time a function is run, you can

do sophisticated things. Once written, keystrokes can be saved as data or in a playback-only module called *Executor*.

You have to be careful choosing keys in this program. To accommodate key combinations which generate ascii or already have hot key assignments in other programs, each keypress is passed on to the current program after *Keystroke* acts on it.

This produces interesting side-effects. Writing this, I set up <shift><F1> to open the root directory of my hard disc. Fine till I used *Acorn Advance*, which scaled my document to 10% and left it behind the directory window causing it to disappear.

If, however, you're one of those users who drives with one hand on the mouse and the other on the hot keys, it could be worth your perseverance to give it a try.

Product details

Supplier: Quantum Software
Tel: (0506) 411162
Price: £29.95

WHICH WORD PROCESSOR?

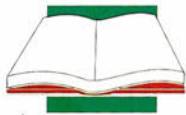
From November there is a new word processor that offers considerably more, for rather less. It includes all the normal word processor functions, *and many more*. Some of the features you *won't* find in any other word processor include:

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Documents can be just about any size - far larger than memory.



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The first Acorn computer application to support full colour sprites.



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Which basically means industry standard file format for colour images and high quality screen display.



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Two forms of help mean that finding your way around this program is easier than ever.



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All modern word processors provide some form of desk-top-publishing support. This word processor goes further than any other.



OLE

The first Acorn computer application to offer object linking and embedding to other applications.

and it offers all this for only £99 + VAT

So what's the snag ? You'll have to wait until the Acorn World show in October before you can buy it.

And who produces this word processor ? The only company that could.

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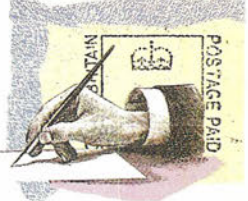
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E.O.E





PLAYING THE GAME

I greatly enjoy your magazine, but I do feel that, unfortunately, like most, you have a rather-lacking games section. I have friends at school (who have a rather more favourable attitude towards PCs and Amigas) who think Game Show is considerably better than any of your rivals in the Archimedes scene. However, I think a bigger supplement, say 25 - 40 pages in length depending on the amount of new releases per month, would make your magazine even more popular than it already is.

The supplement would contain in-depth reviews and hints and tips, and a section concentrating on previewing planned games. As the Acorn games market is currently expanding greatly (as you described in the December 1992 issue) I think a more appealing format to this section would help with (for example)

percentage values for graphics, sound, playability, value for money and so on.

Perhaps the section could be presented as a pull-out from the magazine.

Being in the targeted age group for this section as far as buying games is concerned, I am convinced that this is necessary to boost the Acorn market even further, with you being the premier Acorn magazine. We have seen what the future holds concerning the market, and I am looking forward to this as much as anyone, and I can't emphasise enough the importance of previewing games.

Asad Yawar
Surrey

Considering that in an average issue we have around 60 pages of editorial copy, I think that the suggestion of 25-40 pages of games coverage may be slightly optimistic. But ignoring that, Asad does have some interesting points to make.



The main one is that the Acorn games scene is expanding: with games like *Zool* and *Quark* around now, and mega-releases like *Speedball 2* on their way, there's no denying this. Yes, there are more released nearer to Christmas, but then we cover them in our packed games supplement. And as for previews, we're keeping our ears close to the ground: look at *Quark* in the August issue, where we not only had the first preview of the game, but also an exclusive demo on the disc.

As we move toward Christmas, Game Show will get bigger and better. But don't forget, we can only reflect what's happening in the market.

WHEN I'M 64

I picked up a copy of *Acorn User* out of interest today, and was pleased to read Mr Harvey's letter suggesting the newsletter *ByteBack*.

However, I was appalled at your sarcastic comment referring to the Commodore 64. Did you know that the old 64 is alive and very well indeed...

Mrs M V Rathbone
Southport

Sorry, I had to stop this letter there: we are an *Acorn* magazine, after all. A thousand apologies if the comment about the good old C64 caused any grief. Of course, we all know that Acorns are complete rubbish compared to the awesome power of Commodore's machines. Ahem. Next!

THE SUN SHINES OUT OF MY ARC?

It was a pleasure to read of Arm Ltd's 'pipeline' containing the Arm700 chip; no doubt it will address slow old Memc's limited access of Ram. The future for Risc OS users looks great: now we can look forward to Risc OS 4. The competition looks sad, no matter

how good the adverts are. Who wants a fast box with a 'quick and dirty' operating system that has a graphical user interface glued onto it?

No, the real competition comes from Sparc stations, or Apple Macs: but at what price/performance ratio? Sure, Risc OS is not perfect, but we can wait for Risc OS 4. In the meantime, due to the good structuring of Risc OS, additions can be made. The future for Acorn users, dabblers and programmers looks bright.

D Ginger
Hampshire

Nice to hear from a happy customer. Unlike...

I expect you get many letters like this, but I still feel that the problem of getting good software that is compatible with industry standard programs on the Arc cannot be over-emphasised. Recently, software houses such as Computer Concepts have shown the computing world what the Arc can really do, yet the computer is still regarded as an education-only machine, which is a real problem for users like me.

A problem I see with all programs, both games and serious application, is the cost. Some people might be able to afford £170 for a program such as *Artworks*, but they are

definitely a minority. Surely software houses would sell more programs and go some way to slowing down software piracy if they were simply to reduce their prices?

J George
Yorkshire

Now hang on a minute.

There's no denying that we could do with more software for Risc OS machines, but one thing that you cannot criticise is the pricing of the software. *Artworks* for £170 might seem a lot to you, but it is a total bargain for what you get: ask someone who has forked out for *Corel Draw!* Besides, if your average power user is willing to fork out £1500 or so for a multisync A5000, who can moan if the software package, one of the most powerful packages ever devised for Acorn computers, costs a measly £170?

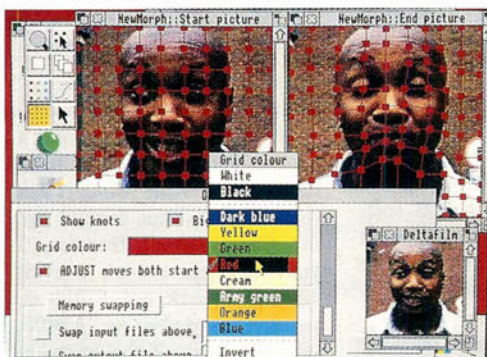
Although the point about the lack of software is very relevant, moaning about high pricing is a habit formed by the 'good old days' of home computing, when software as complex as *Impression* and *Artworks* simply didn't exist.



Morphing programs have been available for some time now on other computers and I must admit to having felt just a little bit envious. Maybe the trend is now beginning on Acorn machines, though, what with the release on the August *Acorn User* Subscriber's Disc of *Morph* and now a commercially-produced package, called *Morpheus*.

The software has been written by Henrik Bjerregaard Pedersen and is available from Oregon Developments at a very affordable £34.95, which includes postage and packing. The price is exceptional when you consider what other computer users have to shell out for a similar product.

Morpheus will run on a 310 machine but 2Mb of Ram and a hard disc is the preferable setup. Quite large images can be morphed on even a 310 by using a memory-swapping routine. This



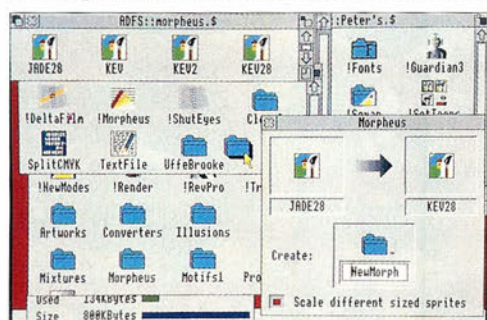
The default colour of the mesh is red and can sometimes clash with the colours in a picture underneath it. Although the colour of the intersecting points of the mesh or 'knots' can't be changed, they can be toggled between a normal or an easier to see size.

means only part of the image is held in memory with the remainder on disc. When *Morpheus* needs to see another section of the image, the old part is simply written back to disc and a new part is loaded.

For those of you who don't know what morphing is (where have you been?) it is an effect used more commonly in the cinema and on television than in the home, to create a transformation from one image to another.

You've probably all seen the TV advert where the snail changes into a frog and then hops away. *Morpheus* makes this effect possible for Acorn users and, even better, you don't have to wait an eternity to see the results of your labours. A 20-frame animation can be compiled in as little as five minutes.

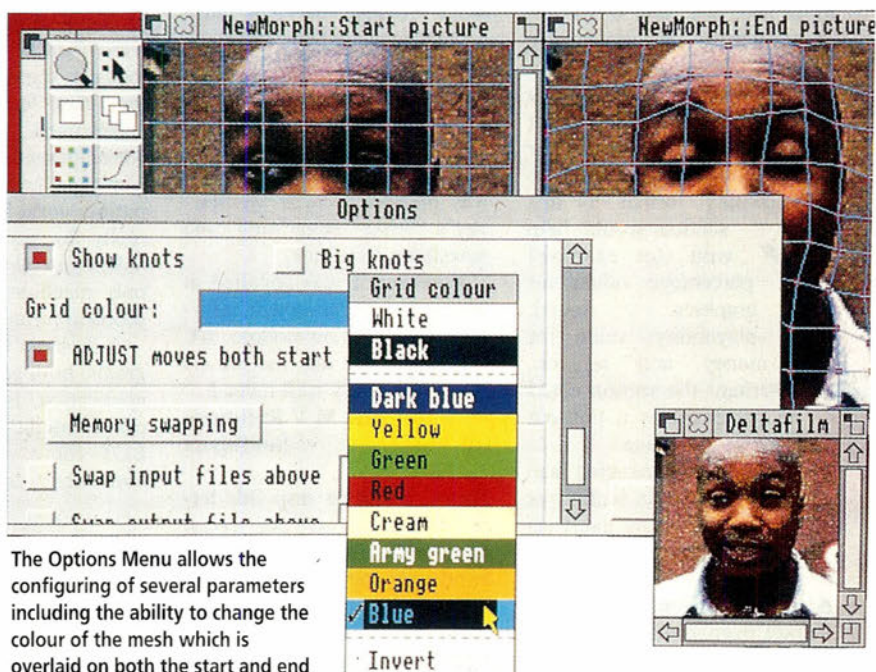
All that *Morpheus* requires to begin morphing is two pictures. These can be either 256-colour



Face to face

The Acorn is fast catching other platforms with the quality of morphing packages on offer.

With *Morpheus*, Pete Clements believes it may just have taken the lead



The Options Menu allows the configuring of several parameters including the ability to change the colour of the mesh which is overlaid on both the start and end images. The default size of the mesh is set to ten units by ten but can be increased if required. Finer control is possible the more units there are.

or greyscale sprites, or they can be 24-bit images. A variety of pictures exist in public domain libraries but, ideally, it is better if you have access to a hand scanner or even a cam-corder to obtain those special personal morphs of Granny transforming into the goldfish.

Getting started

Once you have got your two end pictures you will find that setting up the way that objects or people morph into other objects or people is surprisingly straightforward.

The two pictures, the start and end frame, appear on the screen together and are covered by a grid with knots at the intersections. A toolbox is attached to the picture on the left and contains tools for zooming in to an area, setting guide-lines and groups, toggling the grid on and off and editing the knots.

Clicking on the Morpheus icon opens a window which shows two empty boxes at the top separated by an arrow. All that has to be done is to drag your start' sprite to the left box and your 'end' sprite to the right. The program will automatically scale pictures that aren't the same size.

This latter feature is probably the one that most people will use the most, as it is this tool that allows you to move the knots and thus create the smooth transition from one frame to the other.

If only a small part of a picture is required to move, a changing expression on a single image, for example, then the grid can be turned off and groups of knots applied to areas such as just eyes and mouth. This makes *Morpheus* very comprehensive in its editing abilities and although this 'fine control' may seem a little daunting at first, it is really quite easy to master.

Saving the grid

Once you are happy with your edited grid you can save your setup for later use. This includes all the information relating to the grid, groups of knots and even the grid colour itself.

Single frames can be morphed, showing the



midway image between the two pictures. If two faces are used then the results can appear quite strange, with this new person having a mixture of characteristics of the two. Sequences of frames can be morphed and saved to a directory for later playback in another part of the program, the Delta Animator.

However, animated films can be made directly by setting the number of frames and dragging the save icon to a directory viewer. The author has implemented a solid drag routine into the software instead of the normal outline-save procedure and even this small feature gives the impression of a very polished piece of software.

The frame counter gives an idea of the space



Jade and Kevin were digitised as shown above, from a camcorder image and output to Mode 28 after undergoing processing in Change FSI. Initially the meshes on the two pictures are identical.

If the pointer passes over a knot on the right picture, the corresponding knot on the left picture is also highlighted. The idea is to move the points on Kevin's face so they line up with the equivalent features of Jade. You can 'morph' a single frame at this point which gives you a half way transition between the two faces as shown on the left.

This is useful for checking if you've adjusted the mesh correctly because sometimes two faces will just dissolve into each other instead of the features moving smoothly in a sequence.

The number of animated frames can be set from just a few up to fifty or more. Twenty five frames is equivalent to a second of animation but if a high resolution mode is used it will eat into disc space unless the images are very small. The Number of Frames dialogue box gives a readout of required disc space every time the frame number is increased.

required on disc for the animation to be saved and even if your sprites are too large, they can be reduced in size at this point by changing the information in the size box. The sprites I used for Jade and Kevin were 228 x 228. Changing this information to 114 x 114 more than doubles the space available on a floppy disc.

Animation timing

The timing of the animation can also be changed; it can be set to regular, to speed up or slow down, or to start off fast, slow down and run fast at the end of the sequence, or start slow then fast and then slow again.

These options are set before saving although some further control is available once the film is running. The animation can be set to run at normal fast speed, medium or slow.

You can also step through the sequence a frame at a time or even create a yoyo effect, which worked particularly well on my Jade and Kevin film. It gave the impression that after changing into Kevin, Jade returned to her former self and smiled at her new-found ability. I showed the two of them this film and I still don't think they have quite got over the experience.

Conclusion

With little time and an incomplete preview copy of *Morpheus*, that never crashed once on me, I have barely scratched the surface of the capabilities of this outstanding piece of software.

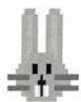
When all of the features are implemented in the release version, we Acorn users will have an outstanding, value-for-money morphing package. And when you consider the low price of *Morpheus*, this is one that is going to put other morphing packages on other computer platforms to shame.

If any other Acorn software house is thinking of releasing its own morphing software, it will be hard pressed to better *Morpheus*. An extremely polished piece of software and a lot of fun as well.

Product details

Product: Morpheus
Description: Commercial morphing package
Supplier: Oregan Software Developments
Tel: 021-353 6044
Price: £34.95

Pictogram



Pictogram is an application that progressively teaches children the use of graphs for representing data. Pictures are dragged onto stacks and may either be displayed vertically or horizontally. The graph can be switched to a block graph where the pictures are replaced as more abstract blocks of different colours. Finally the blocks can be joined into one long bar to create the familiar bar chart.

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KEYSTROKE

The most powerful program ever written

Do you tire of all those unnecessary repetitive menu selections, wish that your favourite program had more Control key type short cuts? Or just tired of moving and resizing windows to the same position every time you use a program? Well a revolutionary new utility has been developed for the Acorn Risc OS machines. This program can actually remove all of those tiresome mouse clicks with just one key press!

Believe it or not, *Keystroke* can actually control any Risc OS program. Imagine a single key press to perform 'Group frames' in Impression, perhaps set 'Text Repl' in a frame to a specific value or a quick key press to turn a frame to transparent colour! Ctrl+T could bring up Paint tools window, F1 to mount a disc, F11 to bring up the task display, or F3 to save a file, or save the file automatically every 15 minutes. *Keystroke* can perform these and many more amazing things! *Keystroke* also comes with a Buttonbar application that allows keystrokes to be used by clicking on an icon. Create your own tools window! A complete Impression tool window is included!

Archimedes World - "damn clever, easy to use, best of its kind, 5 out of 5!"

There is just not enough room here to tell you about our program, send off for our demo disc for £1.00 and see for yourself what you can do with this incredible program.

Keystroke is suitable for all Archimedes running Risc OS 2-3.11 and is offered for only £29.95 fully inclusive. No VAT.
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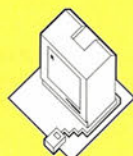
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POWER

to the people

Datapower started as the handy little database we all need. But after a few months, James Richards finds it's moving into unexpected areas of his hard disc

I've been using *Datapower* for a good three or four months now, and every day I use it more and more. This package can be used for a lot more than I bargained for.

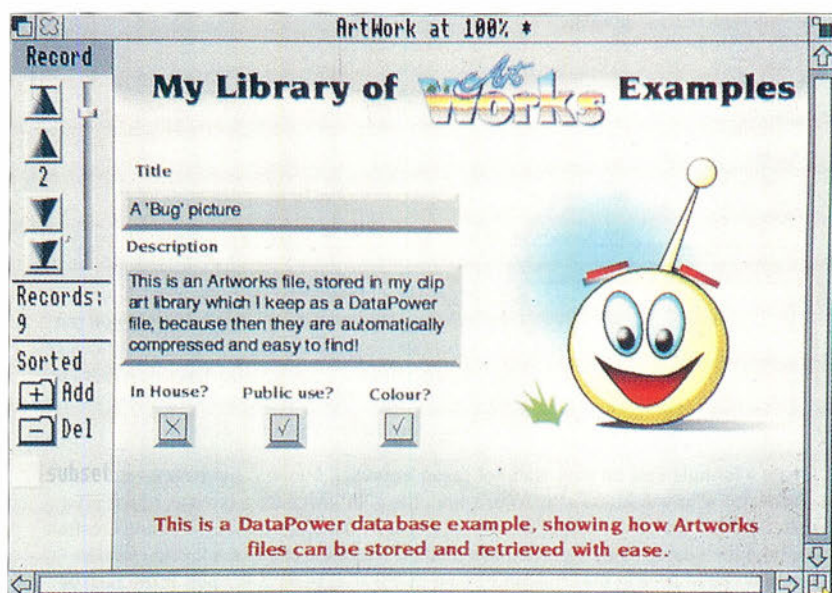
Generally, mailshots are limited to wordprocessors, but not so with *Datapower*. Formulae fields are a very powerful feature and, used in the right way, *Datapower* can behave more like a spreadsheet than a database.

In fact it is so versatile that you can be a little awed by what you can do with it. After a slow start, *Datapower* has crept into every corner of my hard disc, and now it keeps me organised at work and home. This article is for those of you who are just getting into *Datapower*; it will help you realise there is more to this database than meets the eye.

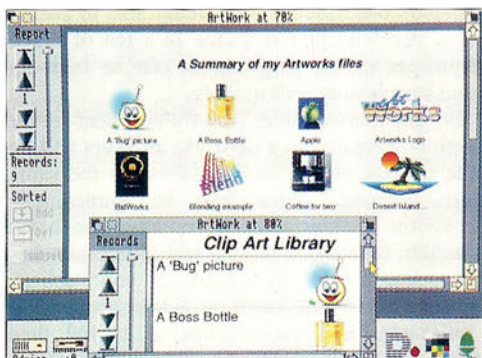
Power two

Meanwhile, the next version of *Datapower* is well underway. It contains a few enhancements: you can expect the ability to incorporate *Artworks* files into your databases, as graphics or backgrounds.

Iota also told me that you can expect to be able to search for a matching sprite. According to Iota there is a simple Risc OS routine to compare two sprites. Simply dropping in a sprite that you want to search for, and asking it to find



Artworks files can become a seamless part of any Datapower database



A Datapower report can just pick out the pictures

Moving layouts

On some of my databases I have several layouts, but could not see any easy way to change the order they appear on the layout list.

After my initial annoyance with this drawback, I realised that there was an easy way to sort them all out.

Imagine three views of my address database, Full Info, History and Contact Details. I wanted to move my History layout – which details past events – to appear after Contact Details.

To do this I chose the History view, chose New Layout – which made a new layout the same as the original mailshot layout and listed it after the Contact Details view. Then I deleted the original History layout.

Hints & tips

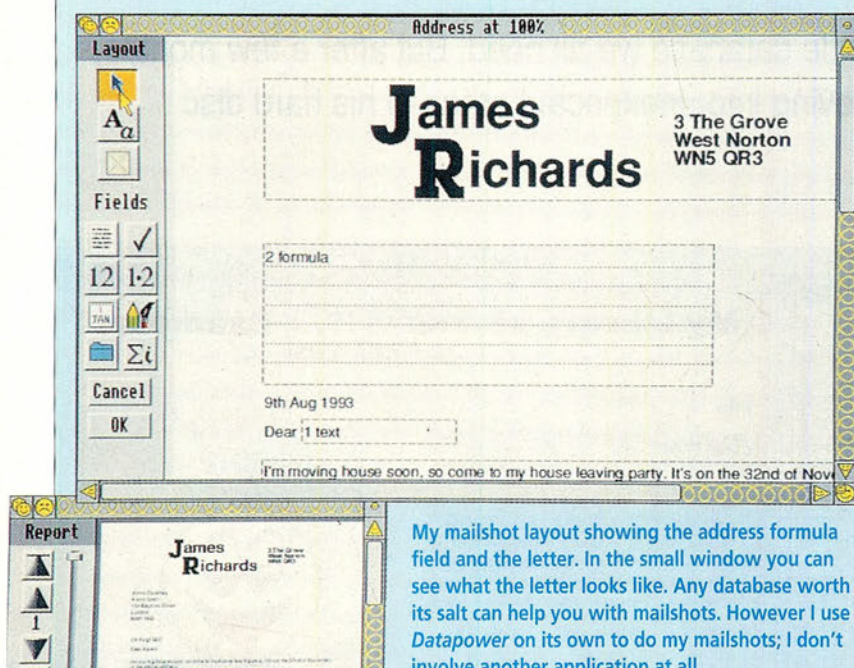
- Click Adjust on add record to make a copy of the current record.
- Field renumbering makes you jump fields in the right order.
- Make regular backups of your work by saving a CSV data file on to another part of your hard disc.
- Use the arrow keys to jump record by record.
- Use SHIFT+TAB to jump backwards field-by-field: use TAB alone to jump forwards through the fields.

Shooting people

The ingredients for a mailshot are an address, a salutation (the Dear Fred bit) and the letter. You have two choices concerning your stationery, envelopes with address labels stuck on them, or window envelopes. The latter is my preference, print out the letter and when you fold it up right then the address should fall neatly inside the window.

Take a look at the screen shot to see how I have arranged this in *Datpower*. I created an A4-sized report layout, and measured where the envelope window was. The address frame was put on the layout using the page rulers. In my contacts database my Address and Postcode fields are separate, so to add that touch of class I have taken the postcode field and tacked it onto the end of the address using a simple formulae field. Addresses vary in length, and with most other databases you'll end up having the postcode floating a few lines below the address.

I've also stuck the addressee's name on the top of the address. The formula to do this is quite simple. Imagine that the fields have the names, 'Full Name', 'Address' and 'Postcode'.



Create a formula field on your mailshot called 'Formulae Address' and have a formula like: 'Full Name'+'\\n'+ 'Address'+'\\n'+ 'Postcode'. The '\\n' part adds a carriage return after each field. For the actual text of the letter I create a blank frame with the Frame Creation tool and then dump some text from *Edit* into the frame (do this in the layout creation mode as I have done in the screenshot) then that text appears in the box. It can then be edited to your liking by double-clicking on it and using *Datpower's* text editing features. This does mean that you are limited to one style in the letter text, but it keeps things nice and simple. When it comes to filing letters, *Datpower* can also be useful.

Complex searches

Sometimes a simple search is not good enough. For instance, I have a database which I use at work that controls my stock levels. Sometimes I want to know if an item has been ordered but the supplier has not delivered on the date agreed. The search formulae that I type in to make this search is:

'Order Sent to Supplier'<>NULL AND
'Order Received by Supplier'>10/8/93 AND
'Supplier can deliver'>16/8/93 AND 'Item
in Stock'<>TRUE.

Now if I had to type this in every time I

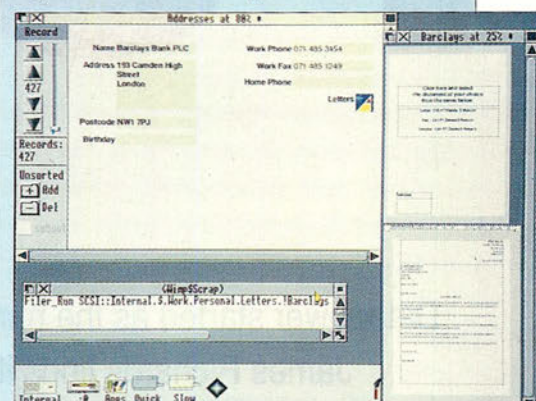
wanted to make this search I would not be a happy man, but if you type it in you can save it as a text file, and reload the formula anytime you need it.

To save a search formula, type it into any field, then press CTRL A to select the text. Now drag this text on to *Edit* and save it with an explanatory filename.

Then the next time that you want to search using this complex formula, simply initiate a search in *Datpower*, then drag this formulae text file back into any field.

Filing letters

Now, it's easy storing *Draw* files or *Edit* files in a *Datpower* Anyfile field, but when it came to storing *Impression* documents I was stuck. The Anyfile field cannot store applications, and that's



exactly what an *Impression* document is. My letters and faxes are based on an *Impression* file which has within it individual master pages for a letter, fax and so forth.

Each of my contacts gets one of these master documents, and each time I want to send them a letter I use Create New Chapter from the *Impression* menu. Then I can choose the master page which the chapter is based upon, and the chapter is added to their mail file permanently, each chapter being a different communication on a different date. This way I can store all my correspondence to that company or person in a single *Impression* file, and access it immediately.

So, to allow me to get straight at the *Impression* files from *Datpower* I used an Anyfile field to hold an Obey file, which contained the following text:
Filer_Run
SCSI::Internal.Work.Mail.Contacts.!AcornUser
That is, Filer_Run followed by the pathname of the *Impression* document for that contact. I saved it from *Edit* on to the Anyfile field and now when I double-click on the Obey file in *Datpower* the *Impression* file is loaded and I can add a letter, fax or any other master page, and simply save it.

a matching one will match all records with the same sprite. This was incorporated, thinking of *DIY Replay* or the soon-to-be-released *Kaleidoscope* video editor. Being able to search for a matching picture frame in a list of video sequences means programmes can be built up from storyboards very quickly.

In September, Iota plans the client-server version. Running on a network, all users will be able to look at the same database at the same time. Records added will be immediately accessible to other users. If you have conducted a search, then a user adds a record that matches your search, this is added to your subset. Imagine a network based on *Datpower*, where you search for messages addressed to you, then messages automatically appear in your mailbox. Sounds good, and I can't wait to see it.

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Acorn's new floating point accelerator, the FPA10 chip, can make some applications run up to ten times faster. It does this by using a maths co-processor to execute floating point instructions.

Similar maths co-processor chips are common on computers outside the Acorn world – one is built into Intel's 486DX chip. The FPA10, designed by Arm Ltd, is technically interesting because it is a Risc design like the Arm processor. Some complex, but less frequently needed, maths functions (like certain trigonometry operations) are not implemented on the chip but are retained in a software emulation. This optimises the frequently-used operations and keeps the chip small, so it is cheap to make and very frugal on power.

Unfortunately, not all Acorn users are going to benefit from the new chip. Some programs completely ignore the FPA10 and others are compatible with it, but don't gain very much. But the performance of some programs is transformed by the FPA10.

Any application which makes calls to the Acorn software floating point emulator (FPE) will be compatible with the FPA10. As the FPE is a software compromise to preserve compatibility with the real chip, many programmers decided to use their own non-standard routines to run mathematical functions as fast as possible. This has meant that programs like Computer Concepts' *ArtWorks* drawing program and the *PowerShade* ray tracer from Arxe Systems have attained very good performance, but won't benefit at all from the FPA10.

Other programs you'd think would enjoy a clear performance kick include spreadsheets. Colton Software's *Pipedream 4* and *Resultz* spreadsheet applications are both compatible with the FPA10, but our tests indicated no noticeable speed improvements. This is because modern spreadsheet programs are optimised to do as little unnecessary calculation as possible, but they spend a great deal of time looking after graphical user interface issues.

Unfortunately not all Acorn users will benefit from the new chip

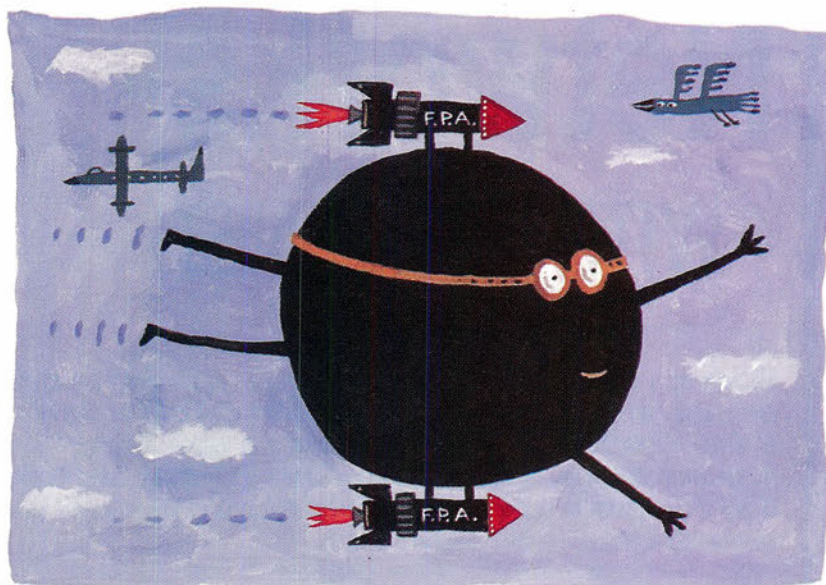
If you dig deep enough, *Pipedream* and *Resultz* do speed up because of the FPA10, but the improvement is blotted out by unrelated system overheads. Although we didn't get a chance to test Clares' *Schema* spreadsheet, the story is likely to be similar.

Another program which is mathematically intensive, but failed to show any benefit from the FPA10 is Risc OS 3 *Draw*. Once again this is because *Draw* uses integer maths routines which sacrifice FPA10 compatibility.

So far the picture might look a bit gloomy for prospective FPA10 purchasers, but the good news is that we have tried several applications which go like a rocket with the FPA10. Bench tests also show the FPA has huge potential which stands up very well compared to hardware maths processors on other platforms like the PC.

Float on

Acorn's FPA10 chip is finally here, but what can it do for you? Ian Burley road-tested the chip, and found that some applications benefit more than others



SPIKE GERRELL

Although *PowerShade* doesn't go any faster with the FPA10, two of its public domain rivals, *Raytrace* and *Persistence of Vision* (POV) and Clares commercial *Illusionist* package, exhibit speed increases of between five and ten times.

The desirability of reducing an hour's worth of image rendering to just six minutes is obvious. Acorn has told us that Oak Solutions' *WorraCAD* renders drawings up to ten times faster. Unfortunately, neither *ProCAD* or *CADet* from Minerva uses the FPA.

There are also plenty of gains, if you use the double-precision version of BBC Basic, Basic 64, included with Risc OS 3.1. Unlike ordinary Basic V, Basic 64 uses the FPE/FPA10 maths route. This makes it much slower than Basic V normally, but with the FPA it's actually slightly faster. Silicon Vision's *RiscBasic* compiler is also FPA-compatible and Intelligent Interfaces reports that its Fortran 77 compiler runs some routines up to 20 times faster with the FPA10.


At £99 + VAT the FPA10 is very good value, but at the moment its usefulness is restricted. There is a classic chicken-and-egg situation out there because many software houses won't optimise their programs for the FPA10 until enough are out there. But if you're a user of an FPA10-compatible ray-tracer or Cad package, or you need to program intensive maths, go for it.

Details...

The FPA10 chip can be fitted to the A5000 and A540/R260, though the latter may need a replacement processor card. A300 and A400-series machines will need an add-on upgrade card like those available from Simtec, CJE Micros and Ifel. Some A3010s with a mezzanine processor board can accept an upgrade as can the original A3000, but there's no FPA for either the A3010 or the A4000.

For our tests we used a Simtec upgrade (£199, both Arm3 and FPA fitted) in a A440/1 and A5000. Below are some factor speed increases:

Basic V: Zero
Basic 64 (non-trig): 10.95
Basic 64 (trig): 4.16
Pipedream 4: Marginal
Topographer render: 1.475
Render Bender 2: Marginal
Illusionist: 5.34



Fast Acorn Networks- - WITH ETHERNET

Managing a class of children all trying to run the same program on floppy drive computers can be a nightmare. Discs get lost or damaged and files can be corrupted, all of which will waste a lot of time at the beginning of a lesson. With hard drive machines things are a little better, but the duplication of resources means wasted money. And there is still the problem of students having different versions of the software or 'accidentally' overwriting it. Not to mention viruses!

Now there is a reliable alternative - Ethernet. Ethernet networking has been used by businesses and universities for some time, and is now available for Acorn computers. The benefits of a fast network are considerable, and you will have total control over the software used by the students. All users will also be able to share resources like CD players and printers, significantly reducing costs.

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For anyone wishing to know more about networking, we have produced a pamphlet called 'Introduction to Networking Acorn Computers'. For a free copy, or if you require more detailed advice about networking, please do write or telephone.



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Smooth

as silk

Computer aided design comes out of the design studio and into the art room as Spot and ProArtisan 2 tackle a silk screen project. Eleanor Walsh paints the picture for you

Art programmes for the computer are now widely used in the design industry, for a range of computer aided design tasks.

So, when the students at Harlington Upper School decided to use the computer in their silk screen prints, *Spot!* from Clares seemed the ideal tool. *Spot!* is a colour separation programme supplied with *Artisan 2*. It is ideal since it breaks a picture into its colour components, producing a sprite, for instance, of all the black parts of a picture. Likewise, silk screen printing involves printing separate colours, one by one, to build up an image.

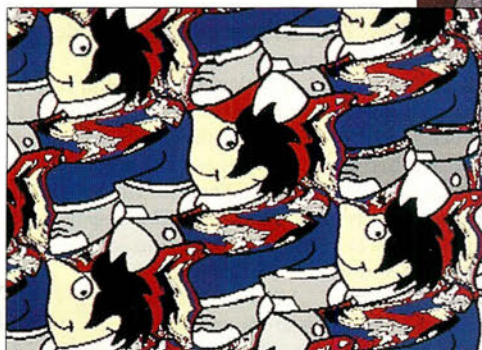
In the classroom

This task was perfect for year nine who have a five-lesson block with *Artisan 2* as part of their art lessons. A small



ROBERT CLIFFORD

The final results, looking good enough to wear



A repeated image creates a striking shirt design

print is useful if you have 250 students, so we decided to put *Spot!* to the test. It worked well and was of double benefit, fulfilling the commitment to IT under the National Curriculum.

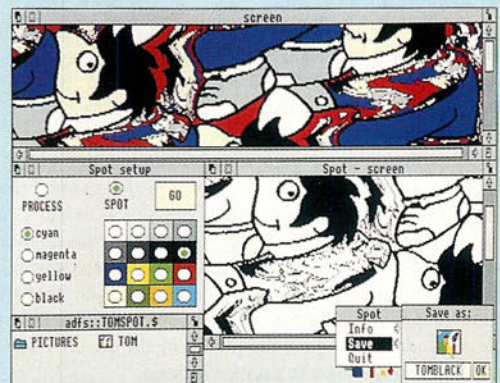
Although *Spot!* was ideal in concept, it produced too small an image for the examination students. So, once we had achieved a complete print, we thought about producing a larger area. This is where *ProArtisan 2* comes in. The students tried the pre-release version and were delighted with the program but came up against a problem with *Spot!* It would not accept a sprite

1

Loading up the software

Spot! comes on the *Artisan 2* disc. You simply load it onto the icon bar. The students save their work as a screen, restricting the number of colours if cost is a priority, as this restricts the number of inks used later on. A typical design is shown opposite, using four main colours plus black. The sprite is dropped onto the *Spot!* icon and a window opens as shown in the screenshot. Select the *Spot!* button as shown.

The palette may not reflect the colours mixed by the student so I suggest loading the sprite into *Paint* and clicking on Show Colours. This lets students check their colours as they save them. Clicking on a colour tells the program you want a black and white sprite for the areas in that colour.



② Saving Spot

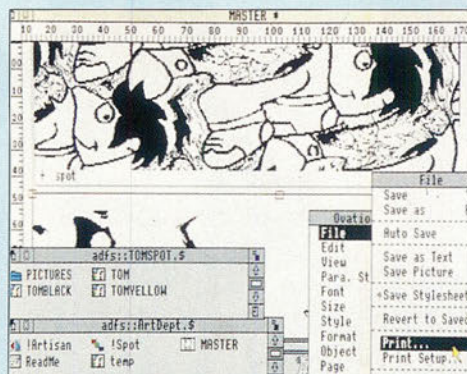
You can check the sprite before saving. For instance here we have produced sprites for the black part of the picture and the yellow parts of the picture. To save the sprite



click on the *Spot!* icon with Menu and choose Save. Type in a suitable name, such as Tomblack, and then repeat for each of the other colours.

③ Loading each colour

The first stage is complete. You now need a box of laser film and a master page set-up in *Ovation* or *Impression*. I set up two frames of the same size on an A4 page for speed and economy. Load the master page and drop one colour separation into each frame – check the crosses in the bottom corner are visible. Load the film individually into the printer and then print. It is wise to label each film for later identification. With 250 students I speak from experience.



④ Preparing the screen

Now you need to prepare a small screen capable of taking the designs: one for each colour.

First the screen needs to be degreased and light-sensitive emulsion applied: these stages are beyond the scope of this article but the chemicals are supplied by Sericol: and there is a fact sheet describing these stages in detail. Read it carefully since some of these chemicals are corrosive.

The next task is to keep the light-sensitive emulsion paint in certain areas of the screen to create a replica of your laser films. The 'colour separated' films for your design are put on the glass, and taped into place. The dry screen goes on top of the film, with a piece of black sugar paper on the mesh and a heavy weight on top. Leave this for seven minutes or so for the light to do its work. When the time is up, wash the screen on both sides with warm water. After a few minutes the design appears in white on the screen. A wash with cold water on both sides produces a processed screen. You now have the images on your screen: one for each colour component of your design. Finally the screen needs to be taped around the edges with brown paper tape to prevent leakage.



⑤ Now print out each colour

Now the first colour is ready to be printed. Wash and iron the fabric. The t-shirt needs to be held in place: I use T-Fix sprayed on a piece of card and placed inside the garment. Then tape the shirt to the table. Lay the screen in place over the t-shirt, with the design for the darkest colour over the



centre. Put a label underneath the cross, so it is printed on the label, not the fabric. All the unwanted areas of the screen must be covered using paper and tape. The darkest colour dye is put on the screen, above the area to be printed. A squeegee is then used to force the ink through the mesh and on to the fabric.

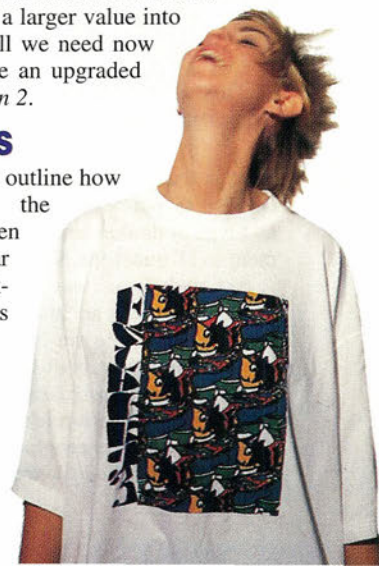
Wash the screen and repeat this procedure with the next coloured ink and colour design. Continue until all the colours are printed. The final print is a replica of the original *ProArtisan* design.

larger than 80K or one in the Mode 15 *ProArtisan 2* requires.

Clares promised to look at the problem, but, in the meantime we improvised. First we changed screen mode to 12, loaded the sprite into *Paint* and grabbed it in two pieces, making sure our sprites were 80K or less. Then we used *Spot!* in the usual way and joined the film together. It would be more sensible to be able to load a Mode 15 sprite with a larger value into a modified *Spot!* All we need now is for Clares to issue an upgraded *Spot!* with *ProArtisan 2*.

THE PROCESS

The steps one to five outline how a design makes the transition from screen to T-shirt: popular with students. Silk-screen printing is only described briefly here, but there are a number of books which describe the process.



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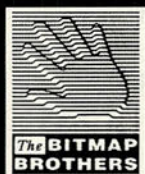


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ClassRom for Archimedes 300 and 400 series and A3020, A4000, A5000 computers is available as a simple plug in board. For A3000 users, an external SCSI hard disc can be used.

Once installed, the hard disc is split into two areas; a read only area for applications and a read/write area for user and scrap files.

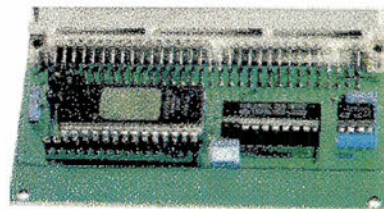
Users can run software from the applications area but they cannot delete, move or add any files.

For updating the software, the applications area can be unlocked by using the password protected management software.

If you have many computers connected to a network, then any changes you make to one computer's hard disc can be transmitted to all the others over the network, automatically if required.

In addition, all the computers on the network can be reset and applications started remotely.

ClassRom is the only integrated protection and management system available for RISC OS.



Oak Solutions' ClassNet card is an industry standard Ethernet® interface designed for use with Acorn 32-bit computers.

There are three versions of the interface available; one for A300/400/5000 series, one for the mini-pod module slot of A3000/3020/4000s and one for the networking slot of A3020/4000s.

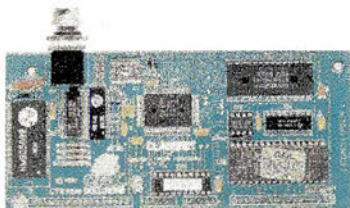
All interfaces have a 'thin' 10Base2 connector and the A300/400/5000 interface also has an AUI connector for use with 10Base5 and 10BaseT.

All ClassNet interfaces include firmware to support Acorn's Universal Networking strategy (AUN), the high speed ClassNet protocol, and the ClassShare client software. The ClassNet/ClassRom interface also has the ClassRom hard disc management software. The ClassShare Server interface includes

the ClassShare high speed applications server. All these facilities can be configured using the ClassNet configuration software supplied with the interfaces.

ClassNet is the logical choice of Ethernet interface for Acorn 32-bit computers. It provides the fastest possible transfer rates whilst retaining compatibility with all other Ethernet systems.

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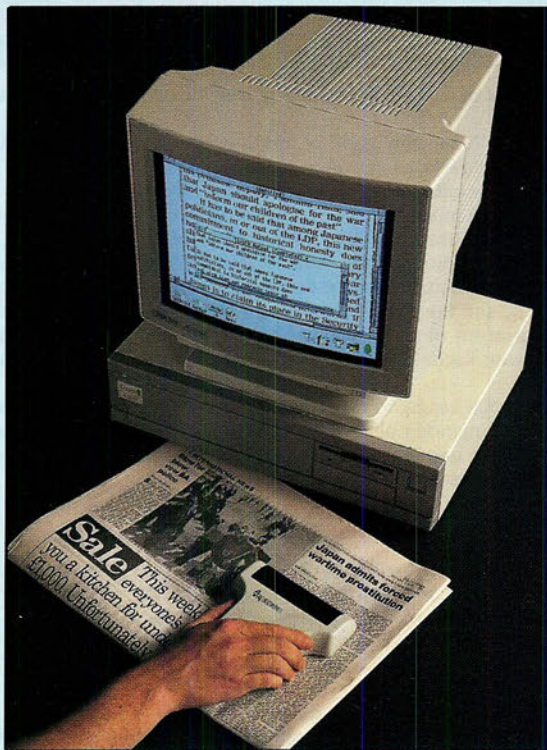
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Enter our competition and win a copy of Risc Developments' new OCR package

Many of us yearn for a paperless office. Converting sheafs of paper into computer text is a tempting proposition and, without a personal copy typist on hand, it can be an arduous task.

Sleuth, a new Optical Character Recognition package from Risc Developments, allows you to skip the typing stage and scan in the complete text. Armed with a copy of the *Sleuth* software and a monochrome scanner, you can convert paper documents into computer text at an average rate of 30 words per minute. This includes the process of correcting



any scanning mistakes but, if accuracy is of less importance, this conversion rate can be much higher – up to 300 words per minute.

Sleuth automatically recognises major fonts such as Homerton, Trinity, Corpus and others. Once a section of text is scanned in, *Sleuth* compares each character to all the font definitions it knows, and, using a statistical comparison, quickly tots up a shortlist of possible matches. The process is then honed down to give the best possible character match.

HOW TO ENTER

For more details on *Sleuth*, contact Risc Developments on (0727) 840303. Meanwhile we have five copies of *Sleuth* software to give away, each worth over £50.

To win a copy, simply answer the questions below, and send your answers on a postcard to *Sleuth* Competition, BBC Acorn User, Redwood Publishing, 101 Bayham Street, London NW1 0AG. The competition closes 1 October 1993.

- 1** . Which famous sleuth used to live in Baker Street?
- 2** . What is the best-selling book in the world?
- 3** . What is the name of the area of memory in which fonts are stored?



Stunt Racer 2000

'A game ahead of its time!'



The creators of *Chocks Away* are proud to present *Stunt Racer 2000*.

The year is 2037 and the world of motor sport has changed considerably to meet the demands of the excitement thirsty audiences. The World Federation Entertainments Network (Known as Fednet or WFE) broadcast *Stunt Racer 2000* to a worldwide audience of over 750 million. Those who are brave enough to race can reap the rewards of stardom, wealth, fame and glory or be lost amongst the mass of failed *Stunt Racer 2000* drivers. The racing season takes place on 16 demanding tracks over all terrains including desert, arctic and lunar tracks featuring a wide selection of jumps and stunts. After completion of all 16 tracks the top drivers will get to race on the Supreme *Stunt Racer 2000* track which is the ultimate test of driving skill.

Stunt Racer 2000 has been carefully developed by the Fednet team over the last year and includes all the best features from other racing games and many innovative new features. The game is designed to be pseudo technical whilst keeping the easy to play arcade feel.

GAME FEATURES INCLUDE:

- Fast solid 3D vector graphic with a large selection of viewing angles and track side cameras.
- Lots of sampled sound effects and plenty of in-game music.
- Two-player split-screen or serial link options.
- Easy to use icon driven menu system to select the many features.
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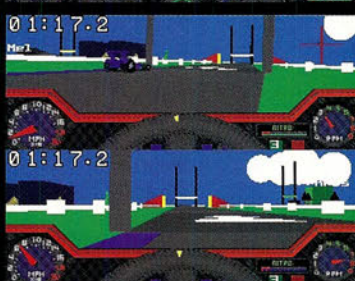


World Federation Entertainments Network

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STUNT RACER 2000

Version 1.0 - 25/01/92



GAME SHOW

News from the games world with Fin Fahey

Street fighting fans can start polishing those brass knuckles; the Arc's first excursion into highway homicide, *Blood Sport*, will be out soon from Matt Black.

The game will offer a choice of ten tough guys to go one-on-one with the baddies, each of which will have a different style of fighting. There'll be a lot of visual action in *Blood Sport*, too. The backdrops, many on an oriental theme, will be animated with lots of birds in flight and innocent bystanders looking astonished.

On its way to the stores is a driving game from the team that brought you *Spheres of Chaos*. The as-yet-unnamed game is more a simulation than the usual out-the-windscreen white-knuckle ride, and gives a bird's eye view of the action.

The programmers have modelled-in the effect of

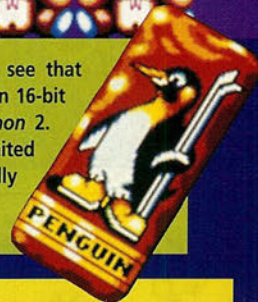
FISHY BUSINESS

It looks like the latest in 16-bit conversions will be the sequel to *James Pond. RoboCod* (hardy har!) is to be brought to us by newly-formed distributors Gamesware, recently founded by Simon Lovesey, lately of Acorn.

As might be expected of such a cute adorable game, this is a platformer. James Pond, the fish who can breathe on land, runs around squashing baddies and generally performing watery mayhem. On an



optimistic note, it's pleasing to see that this was very recently released on 16-bit format, unlike Gamesware's *Xenon 2*. Could it be that the long-awaited flood of conversions is finally about to hit the Arc world?



RENEGADE RUNS RIOT

Renegade, the software company formed by the Bitmap Brothers and Rhythm records after the 16-bit success of *Xenon 2*, has announced a selection of new releases, with more to come. September sees *Sensible Soccer* and *Magic Pockets*. *Chaos Engine*, is expected by December.

Sensible Soccer was the best-selling Amiga game of 1992. In what the company claims is the biggest sports game ever - 64 human players can take part - you manage your team through a series of European competitions. One of the appealing aspects of the game is that it features continually-

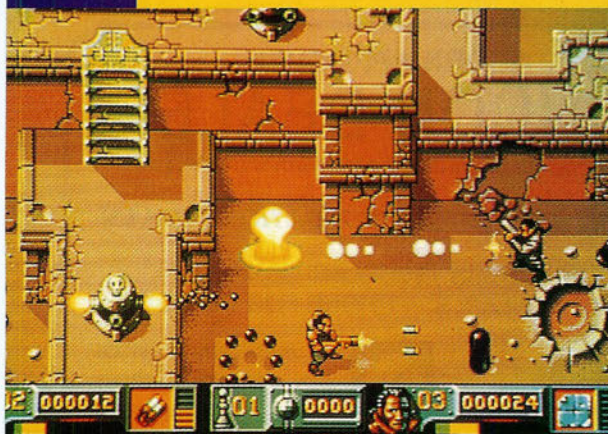
updated information on players, and includes newly-emergent soccer nations such as Slovenia.

Magic Pockets is a multi-level arcade game which features the Bitmap Kid. The fortunate kid has bottomless pockets in which he keeps a variety of



handy objects, which is fortunate, because he has to make his way through a host of slaving baddies to get his lost toys. Mark Coleman, the man responsible for *Xenon 2*, designed the graphics and, no big surprises here,

there's a dead-poppy soundtrack for this one too, this time by Betty Boo. *Sensible Soccer* and *Magic Pockets* will cost £25.99 each.



Cheats

Doggysoft's *Hacker*, offering cheat codes for many games classics, has been massively expanded, with codes for 95 games.

Andrew Ewart has a series of level codes for Power Station's *Axis*. For levels two to five enter:

2 yFishTankW 3 ank-elRotar 4 yEngineVib 5 raphoneKin

Using the correct cases (upper or lower) for the letters is vital.



different types of terrain and even the weather.

Diabolical

The Fourth Dimension is getting into supernatural territory with the release of *Demon's Lair*, an isometric arcade adventure set in the land of Kaxiyo. Pay careful attention to Fourth Dimension's publicity - apparently there are clues to solving the game in the screen shots.

QUARK

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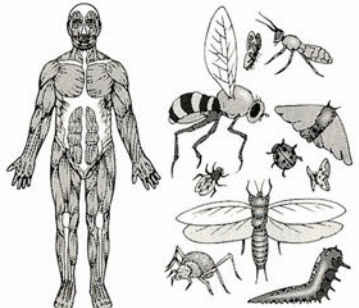



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DUNGEON

Supplier: 4th Dimension
Tel: (0742) 700661
Machine: Risc OS
Price: £34.95 inc VAT

Despite an upturn in the number of new games released in the last year, no one has produced a full-blooded role player... till now.

Whereas games like *Heroquest* and *Heimdall* have only been half-hearted attempts at role playing, *Dungeon* uses the tried and tested formula of the traditional RPG.

The game comes on three discs, plenty of space for an attractive intro to set the scene, but instead, you get an uninteresting loading screen and some dismal music. Fortunately, lit-

tle disc-swapping is needed after the game has started, and this can be avoided if you have a hard disc.

The escape bid

While exploring an ancient monastery your band of adventurers has become trapped at the bottom of a deep dungeon filled with the usual collection of hideous monsters and hidden treasure. Your aim is to fight through seven levels, collecting food and valuables, before escaping to safety.

The main game screen consists of the view window, which allows you to see your surroundings, and a collection of stats and indicator bars to show the current state of your characters. Each of the four adventurers can be selected one at a time, so you can examine their possessions.

Your party starts with basic skills in combat and spell-casting which can be increased as they gain experience. It's a shame effort wasn't directed towards a more-detailed character system, allowing you to choose adventurers and equipment. The view of the cor-



Hmm... methinks this could be a combat situation coming up

ridors and rooms of the dungeon is very impressive, with a combination of well-drawn stonework and excellent programming, which maps these graphics onto the walls.

This 3D texture-mapping is similar to that used in *Wolfenstein* on the PC, although in *Dungeon* the speed and smoothness of the scrolling and light-sourcing used is highly superior. If you have an Arm3 fitted, a special mode can be selected to enhance the frame rate even more. A nice touch is the fading of the light as your torches burn down.

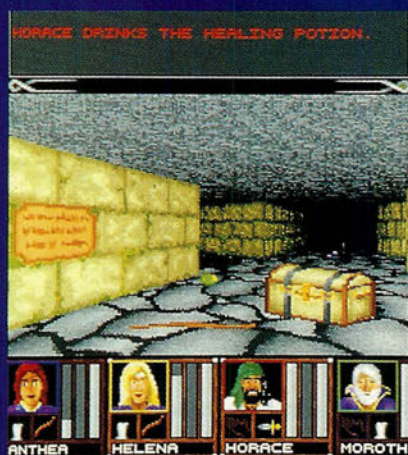
of buttons to be pressed before progression to the next level. The many rooms are well-populated with a wide variety of monsters, some particularly hard to deal with.

Strangely, given the quality of the dungeons, the other graphics are poorly-drawn,

Techniques

Combat with monsters involves clicking rapidly on the weapon attack icons, and throwing anything you're carrying at the enemy. As well as the usual food and water, the odd potion comes in handy after a fight.

An arrangement of pressure pad-activated portcullises forms one of the many puzzles to solve.



A swift potion is just the job after a battle



A frighteningly badly-drawn giant rat assaults Anthea.

Various sounds are used throughout the game and although they are not particularly original, they do use proper stereo. It would have been nice to hear the approaching footsteps of the monsters; instead, the sounds are limited to grunts and screams, and samples to indicate when doors are opened or closed. The layout of the dungeon is well designed, with sliding doors, portcullises and even teleporters to add to the interest.

Simple puzzles have been implemented, requiring keys to be found or combinations



taking on a cartoon-like look. To spend so much effort on a smooth and well-coded game, then spoil it with poor graphics is sadly an all-too-familiar scenario. Despite this, the game has been put together skilfully. And as *Dungeon* is the only real role player available on the Arc, this one has to be a must for anyone into adventure games.

Paul Wheatley

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XENON 2

Supplier: Gamesware
Tel: (0703) 456523
Machine: Risc OS
Price: To be announced

So was it worth the wait? When *Xenon* was issued it was billed as the greatest ever scrolly shoot-em-up in the universe. Finally, after four years, here it is for the delight and edification of the long-suffering Acorn ghetto-dwellers.



Xenon has the virtue of rapid familiarity – no messy learning curve here. You just get down straightaway to doing what comes naturally: blasting the living daylights out of a varied collection of alien scumbags, coming at you in squadrons as you scroll by a bizarre and threatening landscape. As befits anything produced by The Bitmap Brothers, this simple theme is handled with

consummate style. The usual sort of rather vague justification exists for this exercise in mayhem.

Bad guys, the Xenites (returning from their star appearance in cult classic *Xenon 1*) are aching for revenge, so they've gone in for time travel, planting five bombs throughout history, threatening civilisation as we know it etc, etc...

So it's up to you, armed with your trusty Megablaster (small spacecraft) to travel through each of the five historical levels, clearing up the meanies, and dispatching the end-of-level guardian to defuse the time bomb.

Scrolling is generally upscreen, although this game is a pleasant change in some ways: if you make a mistake you can scroll backwards, albeit slower than normal.

The accent is on heavily biomorphic imagery. You start off in the Palaeozoic period. Must be – where else do you run into laser-spitting trilobites and formation-dancing brachiopods?

Most deadly on this level are tube-dwelling worms; their many segments lead a semi-independent existence so they're very hard to kill.

In the midst of this you're running the gauntlet of energy bolts emitted by homicidal coral-type things on either side of the screen. There's plenty

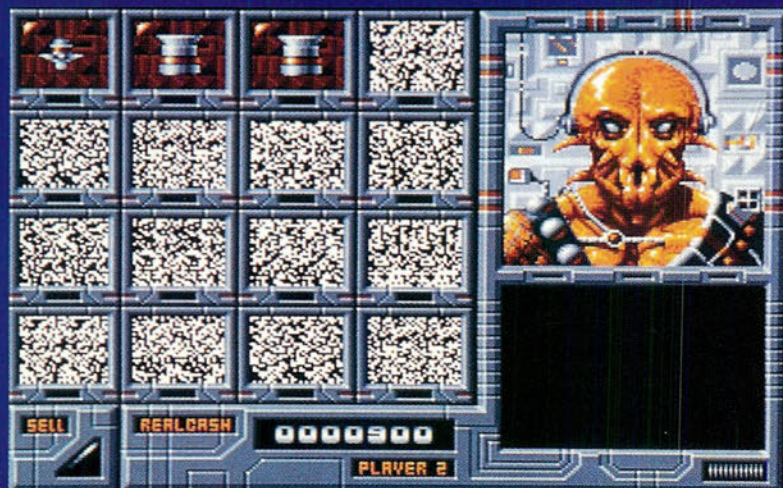
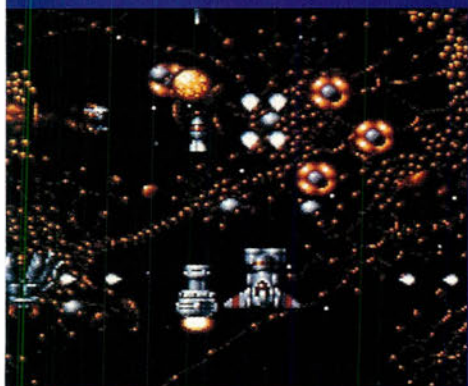
to do here all right. Of course, it's not all work, work, work. You can take time off from mass destruction to go shopping. Collectables include cash, which dying monsters kindly leave behind, and pods which, if shot at, reveal some useful add-ons to enhance the lethality of your battlecraft. Besides the two little hearts, which restore your ship's shields to a greater or lesser extent, there is the Side Shot, which lets you fire off to left and right, the Rear Shot (guess), the Power-up, which increases the size of your shots and the Electrobomb, which is a sort of high-tech half-brick – sweep the screen bashing everything in your way.

Besides this, you get a speed-up to get you over some of those tricky patches faster, an auto-fire feature that fends off repetitive strain injury and a dive module that allows you to

dodge everything. If you don't find all this stuff in the game, never fear. You get to visit a shop staffed by a gruff alien, where you trade your cash for killer goodies. Besides hardware, you also get advice on your strategy.

Xenon 2 is an elegant and beautifully-designed example of its genre. Besides being great to look at, it delivers screen after screen of smooth, breathless action.

Simon Webster



Xenon 2's answer to Alf Roberts

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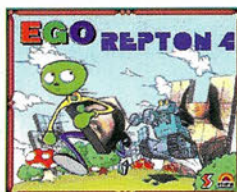
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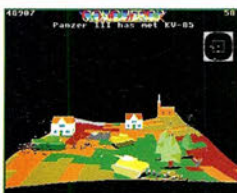
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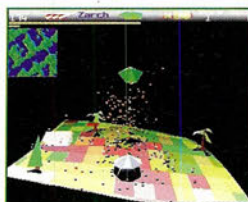
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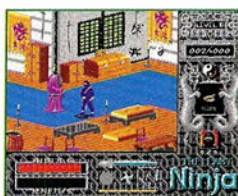
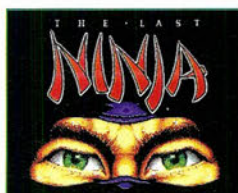
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Play It Again Sam 18 follows the Superior tradition of bundling three 'old' games together with an 'All New' superior game.

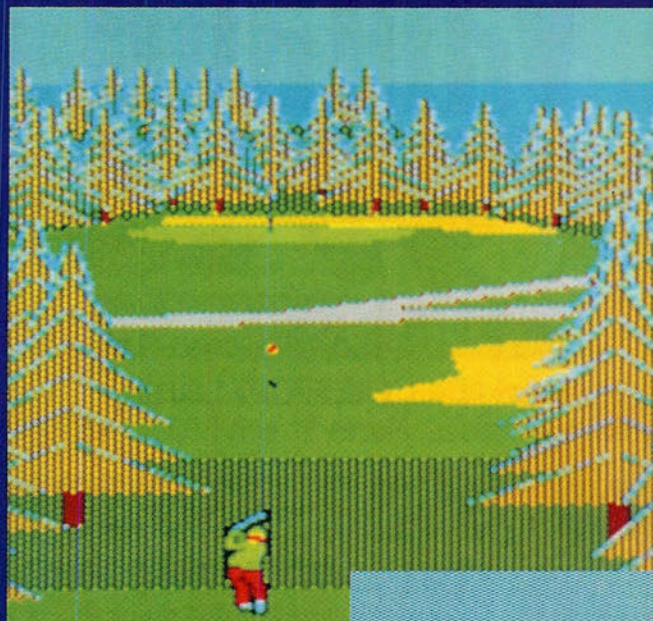
The four titles on PIAS18 are golf simulator *Holed Out*; 3D racing game *E-Type*; sideways scrolling shoot-em-up *Nevryon*; and *Citadel 2*, sequel to the popular *Citadel*.

Holed Out is a full feature golf game. There is a choice of

two courses, two play modes, and four skill levels. The skill levels affect what hazards are active, these include bunkers, trees, water and wind; so just about every hazard and variable you'd expect to encounter for real on the fairway has been included.

Given the limited range of colours in screen, it is amazing just how colourful the game screen is.

I think I'm right in saying that *E-Type* is the only 3D racing game on the BBC to feature other cars, roadside



Holed Out: A full golfing game

scenery, on-road hazards, bends and hills. It is amazing to see a 6502 battling away with itself to produce realistic motion at the speed *E-Type* manages. Again, the colour is excellent given the limitations.

Nevryon is still the only eight-bit 'R-Type' shoot-em-up complete with four levels, two stages, three speeds, five skill levels, end-of-level guardians, weapon power-ups, moving aliens, ground-based defences and, what really matters, lots of destruction! Yet again, excellent use is made of the limited colours available.

Citadel was one of my favourite eight-bit games, so it is very interesting to see a sequel. The plot is the same as the first – take the five gems to the



On the road again with E-Type

transporter – but the puzzles seem an awful lot harder.

The solution covers three sides of A4. As before, keys have to be found to open doors, objects located and used to solve the many puzzles and, most trickily, the secret passages found to reach more parts of the fort.

There are 150 screens in total, so if you're a puzzle fiend *Citadel 2* should keep you busy for many a long night.

Dave Lawrence



Mass destruction with Nevryon

XENON 2 COMPETITION

If you've played the first level of that hard-playing fast-scrolling classic, *Xenon 2*, featured on our cover disc, you're bound to want the full version. So here's the good news. In association with Gamesware, we will be offering not one, not five, not ten, but no less than 20 copies of the game to winners of this month's competition – £500 worth of software.

All you have to do is answer the following three simple questions based on the game and send your entries to:

GamesWare, Unit 26, The Bartlett's, Hamble, Hants SO3 5RD.

The first 20 correct solutions out of the hat will receive copies. If you already own *Xenon 2*, GamesWare will give you a refund.

1. *Xenon 2* features a soundtrack provided by which chart band?

A Utah Saints **B** Bomb the Bass **C** Take That **D** REM

2. Besides being the name of the game, *Xenon* is a member of the family of gases known as...?

A Natural **B** Neutral **C** Noble **D** Negative

3. In the game, why is it necessary to off the Xenites?

A They smell **B** They are Commodore Amiga owners
C They've planted time bombs **D** The UN said we should



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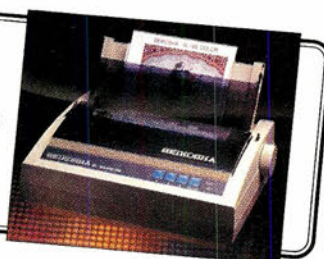
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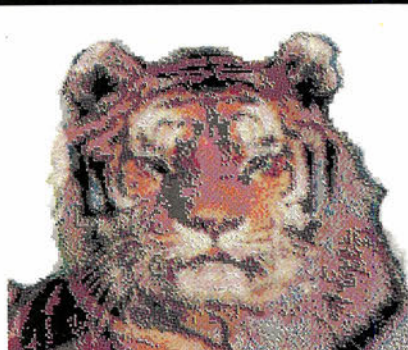
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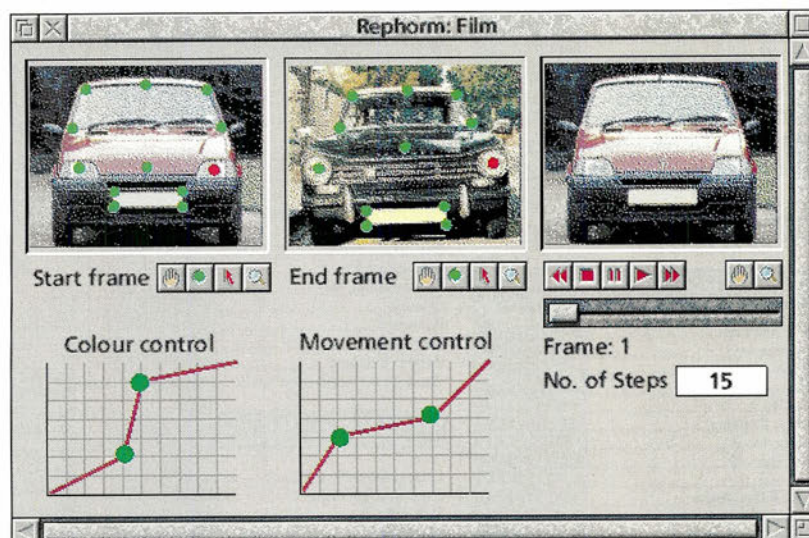
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Back to basics

Entering and printing, input and output. Having got the basics out of the way, Mark Moxon gets down to the serious stuff and invites you to converse with your computer

Last month was a killer: no doubt about it. Variables are fundamental, but unfortunately not terribly interesting. *This* is where the fun starts, so tighten your seat-belt, and prepare to learn how to talk to your computer.

Input and output

Before talking about more variable operators (as promised last month) let's have a look at entering and printing, input and output. This is the crunch: there's not much use for a computer which can't communicate with its lord and master.

You've already seen the PRINT command in action for printing out variable names. Well, there's a lot more to it than that, so let's do a little experimenting. The PRINT command is followed by a list of items to print: these items can be strings, variables or expressions, and they are separated by so-called print formatters: the latter simply determine how the items are shown on screen.

Right, now for some action. Type in and run Listing 1. The first thing you'll notice is that the screen mode changes to Mode 0. If your monitor can't display Mode 0, change the number in line 4). This mode change is done by the MODE 0 command, and I've put it in so we can see the results of printing more clearly.

Printing in detail

Line 5 and onwards contain various PRINT commands, with each line showing off a

particular print formatter. Here's a line-by-line description of what's going on: lines 5 to 9 deal with printing strings, and lines 12 onwards with numbers.

example prints the word 'comma' every ten characters along the screen.

LINE 7 uses an apostrophe. This is an easy one: it means 'move onto the next

LINE 5 shows the semi-colon in action. If two items are separated by a semi-colon, they are printed one after the other on the same line, so PRINT "1";"2" does exactly the same as PRINT "12".

LINE 6 contains a comma. If you've used a wordprocessor, you'll be familiar with the concept of tabs: every ten spaces (or whatever).

A comma in a PRINT statement means 'move to the next tab position to print the next item'. The default tab position is every ten characters, so the

This is where the fun starts, so tighten your seat-belt, and prepare to learn how to talk to your computer

line'. This is similar to pressing RETURN in a wordprocessor.

LINE 8 introduces the TAB operator in its simplest form. The TAB(17); part means 'move along to the 17th character position along this line, and print'. Simple.

LINE 9 shows the TAB opera-

Listing 1

```
REM >Listing1
:
ON ERROR REPORT:PRINT " at line ";ERL/10:END
MODE 0
PRINT "Semi-colon "; "Semi-colon "; "Semi-colon "
PRINT "Comma ", "Comma", "Comma"
PRINT "Apostrophe '" "Apostrophe '" "Apostrophe '"
PRINT TAB(17); "Tab to 17 spaces"
PRINT TAB(17,15); "17 across, 15 down"
:
var=123.45
PRINT "'Variable value is ";var
PRINT "Commas",var,var
```




String operators

| Operator | Description |
|-----------------|--|
| ASC("c") | Evaluates to the Ascii code of the character c. Every letter has a unique number, and this works it out. |
| CHR\$(n) | Takes the number n and returns the character which has Ascii code n. If it helps, the following is true: CHR\$(ASC("c"))="c" |
| LEFT\$(s\$,n) | Returns the leftmost n characters of the string s\$, so LEFT\$("12345678",4) evaluates to "1234" |
| MID\$(s\$,m,n) | Returns the segment of n characters from the middle of a string, starting from the mth character. Therefore MID\$("12345678",2,5) evaluates to "23456" |
| RIGHT\$(s\$,n) | Returns the rightmost n characters of the string s\$, so RIGHT\$("12345678",4) evaluates to "5678" |
| STRING\$(n,s\$) | Evaluates to a string made up of n consecutive copies of s\$, so STRING\$(10,"Aa") gives "AaAaAaAaAaAaAaAaAa" |

tor in its meanest form, with two numbers. Putting TAB(17,15); in the PRINT statement means 'move to the 15th line on the screen, then move along 17 characters, and print'. Note that this form of TAB doesn't care which line you last printed on: it goes to a specific position on the screen and prints.

LINE 12 shows that you can include print formatters anywhere in the line; the apostrophe at the start of the line means 'skip a line', and if you look when you run the program, there is a blank line.

LINE 13 uses the good old comma, but this time with numbers, and there's a definite difference: notice how the 123.45s and the Commas don't line up vertically. This is because with numbers, the computer moves along to the next tab and then prints the number so that it ends at the next tab. If you look, you'll see that the 123.45s end just before the Commas start. Now to input.

Give me input

The only way we've been able to give variables values is to declare them in a statement like var=123.45.

That's fine if you know the values of all your variables in advance, but what if you need to ask the user for information? This is where the INPUT command comes in. Again, it's best to learn how by example, so type in Listing 2.

The INPUT command is, in its simplest form, simply followed by the name of a variable (this can be any name: it

Listing 2

```
REM >Listing2¶
:¶
ON ERROR REPORT:PRINT " at line ";ERL/10:END¶
MODE 0¶
:¶
INPUT var¶
PRINT "You typed: ";var¶
:¶
INPUT "Give me a number " var¶
PRINT "You typed: ";var¶
:¶
INPUT "Give me a string " var$¶
PRINT "You typed: ";var$¶
:¶
INPUT "Question mark",var$¶
INPUT "No question mark " var$¶
INPUT TAB(17,15);"Middle of screen " var$¶
INPUT "Lots of variables " var1,var2,var3¶
PRINT "Values: ";var1;" ";var2;" ";var3¶
```

doesn't have to be the name of an existing variable). What this command will do is print a question mark, and will wait for you to type something in, followed by RETURN. The value you type in will then be assigned to that variable. So, when you run Listing 2, type in a number at the prompt (with a decimal point if you want) and the variable var has a value.

In this case the variable in line 6 is numeric, so if you type in something that isn't a number, you'll end with the value 0. Here's a look at the other forms of INPUT.

LINE 9 shows how to include prompts: just put the prompt string before the variable name. This prompt string can include all print formatters for PRINT above.

LINE 12 shows how to input strings, in this case into the variable var\$.

LINE 15 has a comma after the prompt string, which appends a question mark to the prompt. Line 16 doesn't have the comma, and doesn't have a question mark added.

LINE 17 shows TAB in INPUT statements. It behaves like TAB in PRINT statements: this line prints the prompt on the 15th line, 17 characters in.

LINE 18 has a list of variables, rather than just one. When this line is executed, the prompt appears. If you enter one value, a question mark will appear, waiting for the second value, and then the third.

You can enter all three values in one, by separating them by commas.

Enter 1,2,3 then RETURN, and var1, var2 and var3 will be assigned values of 1, 2 and 3, in one go.

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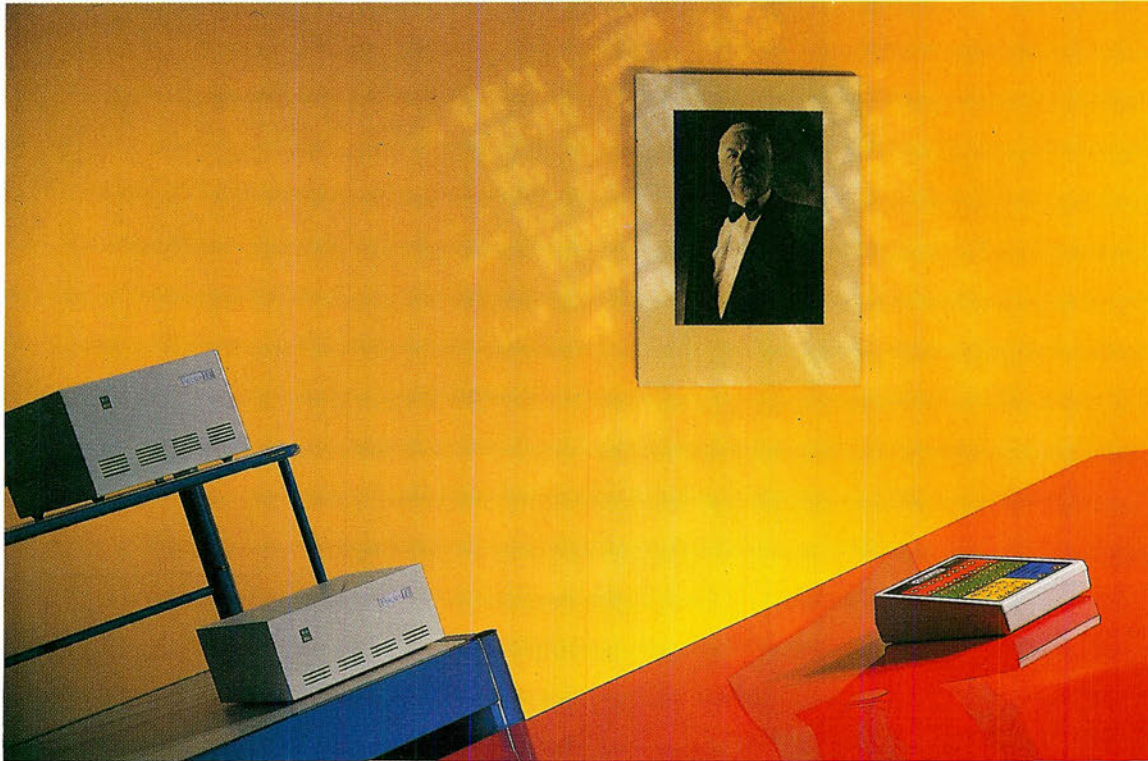
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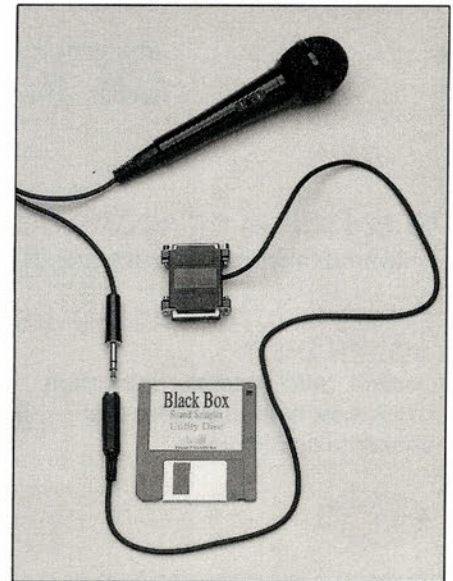
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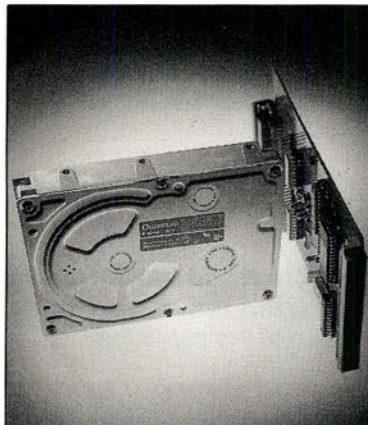
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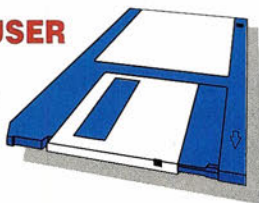
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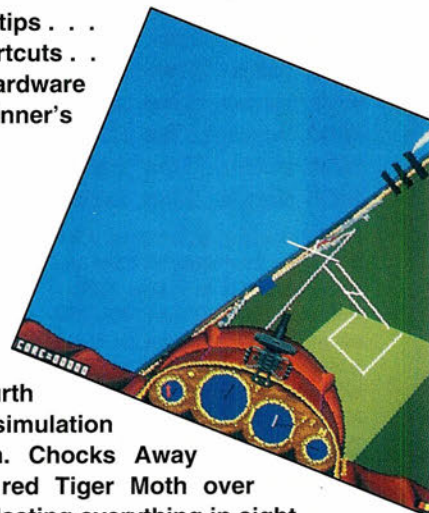
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**INTELLIGENT
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How to learn Basic.
Running sprites in
an application.
Those are the
questions, here are
the answers

QUESTIONS & ANSWERS

Q I am an Archimedes user and I am eager to learn how to program my computer. Is there any book which provides a tutorial in Basic programming. At present I have no programming skills, so I would need to start right at the beginning.

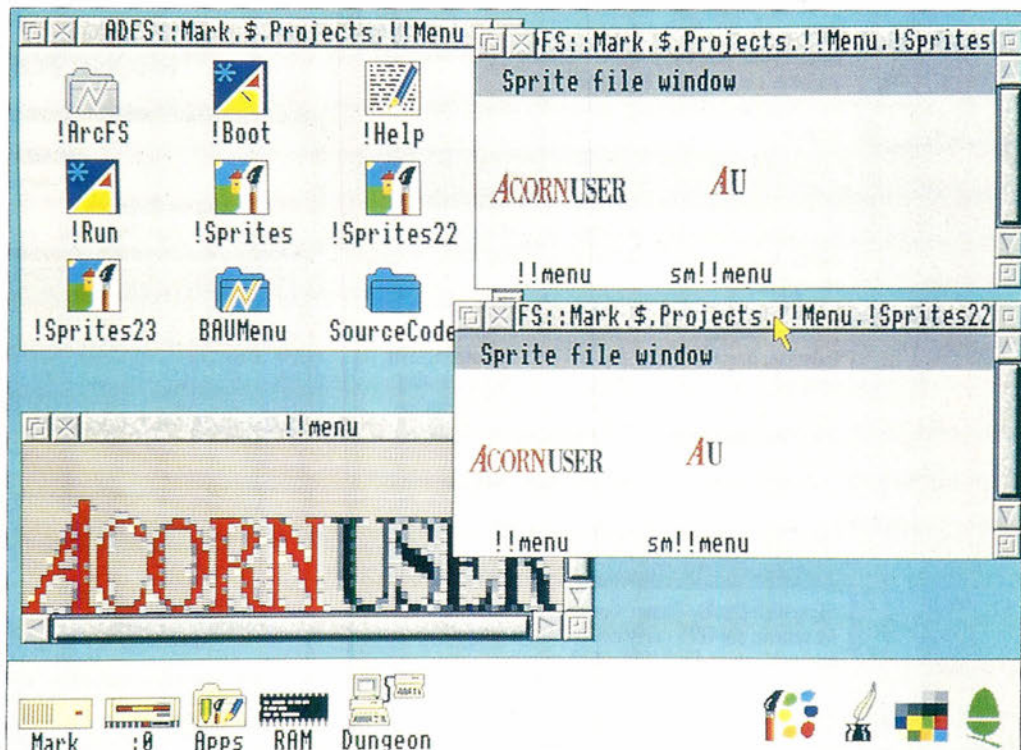
D Habbershaw
Derbyshire

A Unfortunately the 'easy Basic tutorial' book market seems to have been left unexploited since the Archimedes was launched.

The main reference book on the subject of Basic V (the version of BBC Basic which is supplied with Risc OS) is Acorn's *BBC Basic Guide*, which costs £19.95. This is supplied with some Acorn machines, but not all, and is really a comprehensive reference manual rather than a tutorial. The early sections introduce the main concepts, but are only of use if you can already cope with programming in general.

One Basic programming book, which sounds like it ought to be just right, is *Basic V* from Dabs Press. This book is not a tutorial on how to use Basic V, nor a complete reference work: instead, it describes those features of Basic V which were not present in the eight-bit versions of the language, and as such is aimed at those who are upgrading from a BBC and who already know Basic IV. If you know nothing about Basic already, it's a pointless buy.

So how should you learn Basic? Well, there are a few options. First, you can follow the programming course in *Acorn User*, our new 'Back to



Okay. So you've designed a miniature masterpiece. Now see how you can add the sprite to your applications

Basics' series (apologies for the outrageous plug there). Second, you can invest in a general Basic tutorial book (such as the classic *30 Hour Basic* for the BBC) and then buy *Basic V* to bridge the gap onto the Archimedes. Finally, you can take the gamble and get the *BBC Basic Guide*, which you really should buy anyway if you're planning to program in Basic: though don't say you haven't been warned.

Q I refer to your recent article 'Icon Class', in which Jack Kreindler instructed readers how to create their own icons.

It was very interesting, but what I need now is an article to tell me how I can get these

sprites to run in an application, or appear where I want them. I think I'm getting the icon-designing bug.

C Woolf
Betws-y-Coed

A Applications are simply directories whose names begin with an exclamation mark. The various files stored inside these directories were described in 'Absolute Beginners' in the June 93 issue, but let's concentrate on sprite files.

Each application directory should contain at least one sprite file, with the name *!Sprites*. This contains at least one sprite, which has the same name as the application; so, for example, if your application directory

was called *!MyApp* then the sprite in the *!Sprites* file should be called *!myapp* (note that sprite names are always in lower case). Traditionally the sprite is in Mode 12, with a width of 34 pixels and a height of 17 pixels.

Whenever a directory is opened which contains an application, the Filer looks inside the application directory for a file called *!Sprites*: if there is one, it loads this sprite file into the Wimp sprite pool, and this icon is used for that application in the directory display.

You can also have files called *!Sprites22* and *!Sprites23*: these contain high resolution sprites with a width and height of 34 pixels. The first file contains Mode

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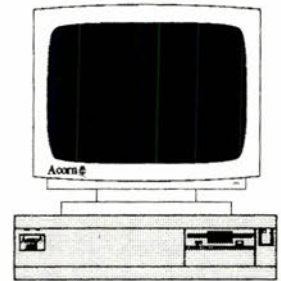
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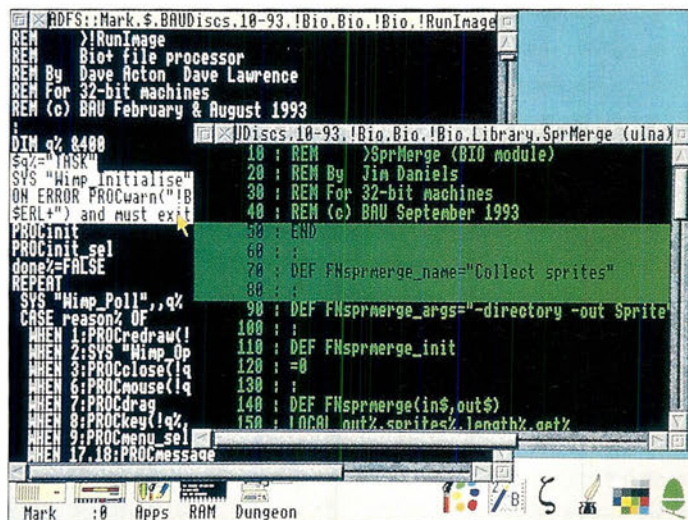
20 sprites (hi-res colour), and the second Mode 23 (hi-res monochrome). The correct file will be loaded depending on which monitor type you have configured.

One final addition is that you can have sprites in these files which will be displayed when Small icons or Full info is chosen in the Filer menu.

These should have the name *sm!myapp* (for example) and should be half the resolution of the normal size icon (17 x 9 or 17 x 17 for low-resolution and hi-resolution respectively).

If you want your sprites to appear in other places, then that's not too hard to achieve either. All you have to do is load any sprite files which live inside an application simply by double-clicking on the application with SHIFT held down, then loading up the sprite files, altering them and re-saving them.

Never try to do this on your master copy, ensure you make a backup first. If you do own a template editor, then you can also alter the sprite references in the template files to achieve icon changes.



Programming in Basic V; the Acorn User approach

Q The other day I was working on an important *Draw* file, and having made some major changes, I then saved it under a new name by tacking the digit '1' onto the end of the filename.

To my horror, I found the file was saved over the original one, removing the old copy which I still needed.

Too late, I realised that the original filename was ten characters long, and adding the digit made it 11. Why didn't I get an error message, and is

there any way I can prevent this from happening again and losing any more files?

B Edwards
Cheshire

A There is a new configuration setting in Risc OS 3 called **Truncate**. If this is set to **On** and a filename is longer than ten characters, it chops it to ten characters then saves; so, if you are in the habit of saving backups by tacking extra characters onto filenames, be

careful not to overstep the mark. However, if the setting is **Off**, the Filer will complain at the length, and you will not be allowed to save.

The main use for **Truncate** is with filing systems which cannot cope with ten-character filenames, such as Dos and DFS. In Risc OS 2 you renamed your files to make sure they are eight characters long, but now they are truncated automatically.

UPDATE

H J Henson from Kilmarnock has written in response to M Cheeseman's question in the July issue, regarding removal of stubborn files from a hard disc. If you *move* files (by copying with SHIFT held down) into a Ram disc, the files disappear from the hard disc: you then delete them from the Ram disc. A cleaner approach is to press F12 and type:

```
Filer_OpenDir null:$
followed by RETURN twice.
This opens a directory into
which you can move files, and
they will be eaten up – like a
dustbin. Use with care: once
you've copied something into
the null window, you won't get
it back.
```

Customer hotline

This month's column is wholly devoted to hints and tips for the Acorn Pocket Book

A-Link

We have had reports of difficulty establishing a connection between an Acorn Pocket Book and an Acorn computer using the A-Link. I have used an A5000 as an example below, but this applies equally to any Risc OS computer with a serial port.

Difficulties can arise when a previous transfer has failed. In extreme circumstances you may find it necessary to reset the Pocket Book completely. This has the effect of releasing any files which have been stuck in an open state and so therefore cannot be opened by another program.

If you are experiencing difficulties transferring files, the sequence below should always work:

- 1 Ensure there is at least 50K free memory in the Pocket Book so that there is sufficient free memory for temporary storage of files being transferred; then switch the Pocket Book off.
- 2 Plug the A-Link into the A5000, then power-up the A5000 so the A-Link detects the A5000 serial connection starting.
- 3 Load PocketFS on the A5000.
- 4 Connect the A-Link at the Pocket Book end.
- 5 Switch on the Pocket Book, and set Remote Link to 'on' at 9600 to ensure that the remote link is enabled, and operating at the right speed. The Remote Link setting can be reached directly by keying Acorn-L.
- 6 Click on the PocketFS icon on the A5000 to open the connection. Similarly, here is a recommended sequence for closing down the connection:
- 1 Select Dismount on the PocketFS menu to close the connection and any open files.

- 2 Turn off Remote Link on the Pocket Book to close the connection at the Pocket Book.
- 3 Quit PocketFS on the A5000.
- 4 Switch off the Pocket Book.
- 5 Remove the A-Link from the Pocket Book and the A5000.

Battery Life

Using the A-Link puts quite a strain on the batteries in the Pocket Book, with a consequent reduction in their useful life. If you use the A-Link frequently we recommend you also use a mains adaptor to prolong battery life.

The power control within the Pocket Book is designed to progressively power-down components as the battery runs out. This ensures it will always have enough battery power, so that the really critical areas like the memory holding your data survive the longest.

The A-Link is among the first things to be shut down if the battery cannot cope; this can often lead to the impression that the A-Link is faulty. Try again with a fresh set of batteries or, better still, a mains adaptor connected.

After the A-Link has been shut down any SSD devices (such as the Spell program) will be next. Only once these have been disabled will the Pocket Book shut itself down.

If the A-Link has to be shut down during a transfer it is possible that files will be left open.

Less power is used when the Pocket Book is idle than when it is performing some computation, but you should still switch it off when it is not going to be used for a time. This will further minimise battery power wastage.

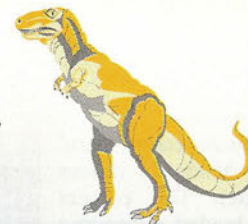
QuickTile (v1.01) £25+VAT

Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application. Simply enter the size of poster required and select PRINT directly from the application! QuickTile does the rest, printing each tile with crop marks & refs. **Requires RISCOS 3.10 or later. Send v1.00 disc back for free u/g. Tiler upgrade - £15+VAT**



TopicArt

A new form of clip art comprising of single discs containing approximately 50 hand drawn high quality draw format clip art images, each on a single subject. Site and area licences are available, please ring for details.



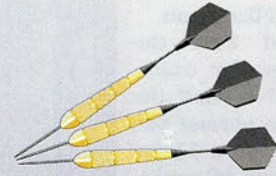
TopicArt9 - Dinosaurs

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Acorn Ext Warranty

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| 1 Year On-Site Service | |
| A3010, A3020 or A4000 | £25 |
| A5000 | £34 |
| 3 Year Warranty & On-Site Service | |
| A3010, A3020FD | £42 |
| A3020HD, A4000 | £51 |
| A5000 | £68 |
| Must be purchased at the same time as computer | |

DIY Ink Jet Refills

Why throw away empty inkjet cartridges...
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| Please specify colour(s) required | |
| 125ml Cleaning Kit | £4 |
| 400ml Cleaning Kit | £10 |
| ColourSep software | £15 |
| Can be used with HP DeskJets, Canon BJ's (not BJ300) & others. Ring for further details. | |

SpecialArt

Special editions of TopicArt consisting of a minimum of 4 discs full of clipart

£20+VAT (each)



Hardware & Books (All prices exclude VAT)

Pocket Bk/Psion

| | |
|------------------------------------|------|
| Acorn Pocket Book | £212 |
| Psion 3 256k | £179 |
| A-Link for either of the above £51 | |
| Call for other peripherals | |

A3010 Series

Free 3 Year Ext Warranty & On-Site Maintenance

Family Solution £424
Connects to std TV. 1Mb RAM, Floppy drive, 2 joystick ports.

Learning Curve Sys £680
As above with 2Mb RAM, Standard Monitor & Learning Curve software.

A3020 Series

Free 3 Year Ext Warranty & On-Site Maintenance

Floppy Disc System £749
As A3010 less PC software & joystick ports. Inc Std Monitor, 2Mb RAM.

60Mb Hard Disc Sys

£899
As above with 60Mb Hard disc.
Add £50 for MultiScan Monitor.

A4000 Series

Free 3 Year Ext Warranty & On-Site Maintenance

Home Office System £999
2Mb RAM, Floppy Drive, 80Mb HD, Std Monitor, EasyWriter2, Jr Database

80Mb Hard Disc Sys

£949
As above without additional software
Add £50 for MultiScan Monitor.
For 1Mb 386 PC Card add £250
For 4Mb 486 PC Card add £450

A4 Portable

Free TrackBall, Batt'y, PCE

A4 2MFD Portable

£1399

A4 4MHD Portable

£1699
4Mb RAM, 60Mb HD, 2Mb Floppy Disc, LCD Screen, PC Emulator.

A5000 Series

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Learning Curve Syst £1445
2Mb RAM, 80Mb HD, MultiScan Mon, Learning Curve Software.

A5000 2MHD80 Syst

£1399

A5000 4MHD162 Syst

£1599

Add £175 for Microvitec CubScan 1440 Monitor

RAM Upgrades

| | |
|--------------------------|------------|
| A3000 up to 2Mb | £45 |
| A3000 up to 4Mb | £105 |
| A3010 up to 2Mb | £35 |
| A3010 up to 4Mb | £139 |
| A3020/A4000 2Mb | £65 |
| A5000 2Mb | £79 |
| A5000 4Mb to 8Mb | £399 |
| Please call for details. | |
| A400 RAM | £35 per Mb |
| A540 4Mb | £255 |

Printers

| | |
|--------------------------------|-------|
| Canon BJ-10sx | £175 |
| Canon BJ-10 Sht Fdr | £49 |
| Canon BJ-200 | £279 |
| Canon BJ-230 | £309 |
| Canon BJC-800 Turbo | £1299 |
| HP DeskJet 500C | £299 |
| HP DeskJet 550C | £489 |
| Add £35 for TurboDriver | |
| HP LaserJet 4 600dpi | £Call |
| LaserDirect HiRes4 | £899 |
| LD HiRes4 Card | £349 |

Scanners

| | |
|------------------------|------|
| ScanLight 256 | £199 |
| ScanLight Video 256 | £215 |
| ScanLight Professional | £549 |
| SCSI Card for above | £139 |

Monitors

| | |
|--------------------------------------|-------------|
| Acorn Colour AKF30/40 | £199 |
| Acorn MultiScan | £249 |
| add £10 for Archi/A3000's | |
| Microvitec CubScan | £399 |
| 0.28dp, 40 presets & 3 year warranty | |
| Philips 1710 17" FST | £849 |
| 0.26dp, 26 presets & 1 year on site | |

Upgrades

| | |
|--------------------------|-----------|
| 386PC 1Mb/4Mb | £390/£490 |
| 486PC 1Mb/4Mb | £490/£590 |
| A4k 1Mb 386PC Card | £275 |
| A4k 4Mb 486PC Card | £499 |
| 5.25" Disc Buffer | £39 |
| ARM3 25Mhz | £175 |
| Colour Burst Card (SM) | £389 |
| Colour Card (CC) | £249 |
| DeltaCat Joystick | £29 |
| Dust Covers 2 piece | £12 |
| Dust Cover A3070 | £8 |
| Floating Point Acc. | £99 |
| G16 Graphics Acc (SM) | £269 |
| I/O Expansion Card | £79 |
| Joystick I/F (All M/C's) | £28 |
| Keyboard Ext Cable | £12 |
| Midi Expansion Card | £65 |
| Micro Mouse (Clares) | £29 |
| Parallel Sound Sampler | £41 |
| Serial Upgrade A3000 | £17 |
| Speeding Joystick | £10 |
| User/Midi Card A3000 | £46 |

Digitisers

| | |
|----------------------------|------|
| Hawk V9 MkII | £259 |
| Hi-Vision Col Digit'r int | £129 |
| Vision Mono Digitiser int | £48 |
| Vision Color Digitiser int | £76 |
| Vision Mono Digitiser ext | £60 |
| Vision Color Digitiser ext | £89 |

| | |
|-------------------|--------|
| RISCOS 3.1 A300 | £63.83 |
| RISCOS 3.1 A5000 | £16.17 |
| RISCOS 3.1 Others | £42.70 |

Acorn Books

| | |
|--------------------------------------|--------|
| A30X0 Technical Ref Manual | £29.95 |
| A4 Technical Ref Manual | £65.00 |
| A540 Technical Ref Manual | £65.00 |
| A5000 Technical Ref Manual | £65.00 |
| Assembler Manual | £25.00 |
| ANSI C v4 Manual | £25.00 |
| BBC Basic VI Guide | £19.95 |
| 1st Word+ Manual | £10.00 |
| DDE User Guide | £25.00 |
| DTP Manual | £10.00 |
| RISCOS 2 User Guide | £15.00 |
| RISCOS 3 PRM's | £99.00 |
| Add £7+VAT carriage for PRM's | |

Other Books

| | |
|------------------------------|--------|
| Archi Game Maker's Manual | £14.95 |
| Archi Assembly Lang Manual | £14.95 |
| Archi Operating System Guide | £14.95 |
| Begin. Guide to WIMP Prog. | £12.95 |
| Dabhand Guide to Impression | £14.95 |
| DTP on the Archimedes | £12.95 |
| Graphics on the ARM M/C's | £14.95 |
| Mastering 1st Word+ | £13.95 |
| First Impressions | £35.00 |
| Good Impressions | £30.00 |

Ink Cart/Ribbons

| | |
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| BU-10 Ink Cartridge | £17 |
| BU-200 Ink Cartridge | £18 |
| BU-300 Ink Cartridge | £12 |
| DJ-500 Bk Hi-Cap Cart. | £23 |
| DJ-500C/550C Colour Cart. | £24 |
| Swift24 Mono/Colour | £5/£15 |

Ordering by Telephone

Please specify the goods you require and for which computer. Please have your credit/debit card ready. We will require the cardholders name, address, delivery address if different and the start & expiry dates of the card.

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Please specify the goods you require and for which computer including your TELEPHONE NUMBER & delivery address. Send complete with a signed cheque/postal order or alternatively for credit/debit cards, the card number, cardholders name, address, and the start & expiry dates. IMPORTANT - Please write your name, address & credit card details in BLOCK CAPITALS to avoid confusion. Orders by post **MUST** be accompanied by a telephone number.

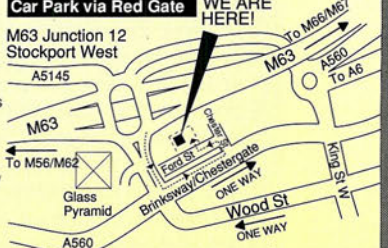
Where to Find Us

From the M63 Junction 12 roundabout follow signs to Cheadle A560 passing the glass pyramid. At the 2nd set of traffic lights turn left onto Brinksway. Turn next left onto Chester St and immediately left again onto Ford St. Enter on-site car park via Red Gates on the right hand side.

Terms

EC residents add 17.5% VAT to all prices except books. Carriage is free (except books, paper & large software applications) on mainland UK, elsewhere at cost. Only Credit/Debit cards accepted for overseas orders. Prices and manufacturer's specifications subject to change without notification. Goods offered subject to being unsold and/or available. Goods not offered on trial basis. Restocking fee on non-defective returns. E & OE

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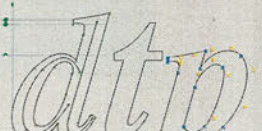


Desktop Projects Ltd

Authorised Acorn Dealer (Tel: 061-474 0778, Fax: 061-474 0781)

Unit 2A, Heanridge Business Park, Ford St, Stockport, Cheshire, SK6 2BT

All prices exclude VAT



QuickShow £25+VAT

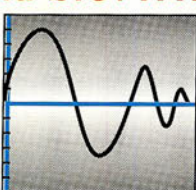
The easy to use slide show presentation and video titling package. Create

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sequences of frames containing text of any colour with drop shadows, outline shadows and rubout boxes using the RISCOS fonts. Sprites can also be included in frames and positioned and resized as necessary. Several screens can be linked together with the sequencer which allows you to fade each screen out and in with the many fades provided. Completed sequences can be converted into stand alone applications. 2Mb RAM required and a hard disc is recommended.

QuickSnd £10+VAT

Load, play, convert & resave existing Armadeus, Tracker and raw data sound samples and apply special effects including Reverse, Echo, Max Vol, alter replay rate and resample frequency. Convert samples into modules for use with the RISCOS sound system etc. Create stand alone Utility modules which when called, via star commands, automatically play and then remove itself completely from memory (this feature is not available on any other sound package). Use Utility sound modules with RISCOS Alarm to play on activation of an alarm. On screen VU meter included.



Hard Discs IDE

The no nonsense RISCOS 3 compatible HardDisc solution

The following are complete systems comprising of the NEW Desktop Projects IDE interface, hard disc, mounting brackets, cables, utilities disc and manual. **RISCOS 3.10 or later required.**

Archimedes 3.5" Internal
Not suitable for A3k, A3010-A3020
120Mb 16ms Cache £250
170Mb 16ms Cache £300
250Mb 13ms Cache £350
330Mb 12ms Cache £Call
520Mb 12ms Cache £Call

A3000/Archi/A5000 External
120Mb 16ms Cache £320
170Mb 16ms Cache £370
250Mb 13ms Cache £420
330Mb 12ms Cache £Call
520Mb 12ms Cache £Call

DTP IDE Disc Controller £79
Complete with cable, guide & disc
Works with Conner, Quantum
Samsung, Maxtor & Fujitsu.

A5000 Second/Exchange Drives
For A5000's only. 2nd Exch
120Mb 11ms Cache £200 £150
170Mb 11ms Cache £250 £200
250Mb 15ms Cache £350 £300

HCCS A3000 IDE Hard Cards
20Mb Internal+User Port £189
60Mb Internal+User Port £279
80Mb Internal+User Port £319
120Mb Internal+User Port £379

HCCS Ultimate Multi-Podules
With IDE Hard Disc A3000 A3010
20Mb Internal £239 £229
60Mb Internal £319 £309
80Mb Internal £359 £349
2 Multipodule slots are provided on the A3010 and 3 slots on A3000

SCSI

The following are complete hard disc systems comprising of a Morley SCSI uncached interface, hard disc, brackets, cables, utilities disc and manual.

Archimedes Internal
Not suitable for A3k, A3010-A3020
120Mb 18ms Cache £395
200Mb 18ms Cache £545
330Mb 12ms Cache £Call
520Mb 12ms Cache £Call

A3000/Archi/A5000 External
120Mb 18ms Cache £475
200Mb 18ms Cache £625
330Mb 12ms Cache £Call
520Mb 12ms Cache £Call
The above are ext units with card.

SCSI Controller Cards
Morley Uncached £139
Morley Cached £179

CD-ROM Multimedia

Acorn Multimedia Expansion System £499

Comprises A4000 style case complete with power supply, SONY multi-session CD-ROM drive, pre-amplifier with headphone/phono inputs/outputs, CD caddy, etc. The unit can also house a 3.5" SCSI hard disc and another CD-ROM drive or Magneto Optical SCSI drive.

External Toshiba CD-ROM Drive (The fastest available) £399

The above drive is a triple spin speed unit and is PhotoCD compatible. The unit is housed in its own case with power supply and comes with one caddy.

Magneto Optical Drives (SCSI)

128Mb Magneto Optical SCSI Drive 28ms 1" high £699

The above unit is a bare drive and can be mounted in the spare floppy bay of an A5000 or in an external case for other machines. SCSI interface extra.

External case for above £69

128Mb Blank Discs £39

A5000 Econet SCSI Interface £49

Add £139 to above prices for Morley SCSI Interface.

Archimedes, A3000, A5000 Software

Applications

| | | | |
|----------------------------------|-------------|-------------------------------------|-------------|
| ABC Compiler (Oak) | £77 | PC Emulator (Acorn) | £95 |
| Advance (Acorn) | £95 | PenDown Plus (Longman) | £68 |
| Ancestry (Minerva) | £59 | Pin Point (Logotron) | £79 |
| Arc DFS (Dabs) | £22 | PipeDream 4 (Colton) | £119 |
| ArcComm2 (Logotron) | £52 | Playback (RISC Dev) | £17 |
| ArcLight (Ace) | £40 | Poster (4Mation) | £75 |
| ArcTerm 7 (Serial Port) | £62 | Presenter 2 Hotlink (Lingenuity) | £33 |
| Artist (4D) | £20 | Presenter GTT (Ling) | £66 |
| Armadeus (Clares) | £65 | Pro Artisan (Clares) | £79 |
| Artisan 2 (Clares) | £49 | ProArtisan2 (Clares) | £110 |
| Art Works (CC) | £129 | ProDriver DJ500C/550C (Ace) | £39 |
| AUN/Level 4 FileServer (Acorn) | £395 | Realtime Solids Modeler (Sil) | £99 |
| Autosketch v2 (Autodesk) | £65 | RemoteFS (Atomwide) | £45 |
| Cable News (Lingenuity) | £165 | Render Bender v2 (Clares) | £99 |
| CADet (Minerva) | £139 | Resultz (Colton) | £TBA |
| Chameleon 2 (4Mation) | £35 | Revelation II (Logotron) | £110 |
| ColourSep (ICS) | £15 | Revelation ImagPro (Logotron) | £127 |
| Compression (CC) | £35 | Rhapsody v2 (Clares) | £49 |
| DataPower (IOTA) | £129 | Rhino v2 (Clares) | £79 |
| Desktop Assembler (Acorn) | £125 | RISCType (CIS) | £16 |
| Desktop C (Acorn) | £180 | Rhythm Bed (Clares) | £40 |
| Desktop Office (Minerva) | £95 | S-Base Personal (Longman) | £79 |
| Desktop Thesaurus (RISC Dev) | £19 | S-Base Developer (Longman) | £175 |
| Digital Symphony (Oregon) | £43 | S-Base Developer + (Longman) | £275 |
| Draw Print-Plot (Oak) | £39 | Schema (Clares) | £99 |
| EasiWord 2 (Minerva) | £126 | Serenade (Clares) | £109 |
| Einstein (Ace) | £106 | ShapeFX (Datastore) | £9 |
| Equisor (CC) | £37 | ShowPage (CC) | £130 |
| Eucled 2 (Ace) | £55 | Sleuth (RISC Dev) | £47 |
| Eureka v2 (Longman) | £99 | SmArt (4Mation) | £50 |
| Font FX (DataStore) | £9 | SmArtFiler (4Mation) | £32 |
| Gammaplott (Minerva) | £36 | Snippet (4Mation) | £35 |
| Genesis 2 (Oak Solutions) | £109 | Sound FX Maker (CIS) | £32 |
| Graphbox v2 (Minerva) | £57 | Speech! (Superior) | £15 |
| Graphbox Pro (Minerva) | £109 | Splice (Ace) | £27 |
| Hard Disc Companion II (RISC) | £45 | Squirrel Database (Dig Serv) | £120 |
| Hearsay II (RISC Dev) | £69 | Squirrel 'C' Developers Toolkit | £99 |
| Hotlink Presenter (Lingenuity) | £41 | StartWrite (Icon) | £55 |
| Home Accounts (Minerva) | £34 | TextWriter (Icon) | £159 |
| Illusionist (Clares) | £79 | Titler (Clares) | £119 |
| Imagery (Palette Studios) | £69 | Topographer (Clares) | £69 |
| Impression v2 (CC) | £125 | Touch Type (IOTA) | £39 |
| Impression Junior (CC) | £75 | Tracker (Serial Port) | £37 |
| Impression Bus Supp (CC) | £39 | TurboDrivers Canon BJ (CC) | £42 |
| Inter-Sheet II (CC) | £30 | TurboDrivers HP (CC) | £42 |
| MasterFile III (RISC Dev) | £47 | Turbo-Type (CIS) | £20 |
| Midnight Express (Mid. Graph.) | £39 | Tween (Ace) | £27 |
| Mogul (Ace) | £20 | TypeStudio (RISC Dev) | £43 |
| Morpheus (Oregon) | £28 | Vector (4Mation) | £75 |
| Notate (Longman) | £54 | Vox Box (Clares) | £49 |
| Ovation (RISC Dev) | £95 | WordWorks (CC) | £38 |
| PCB (Oak) | £99 | Wordz (Colton) | £95 |
| | | Worra CAD (Oak) | £83 |

Games

| | | | |
|--|------------|---------------------------------------|------------|
| A3010 Stick Controller (Arm-T) | £17 | Leg. of the Lost Temp (ARM2/3) | £19 |
| Aggressor (Atomic) | £19 | Lemmings (Krisalis) | £19 |
| Air Supremacy (Superior) | £26 | Loopz (Audiogenic) | £19 |
| Alderbaran (Evolution) | £26 | Lotus Turbo Challenge II (Kris) | £19 |
| Axis (TBA Software) | £19 | Mah-Jong Patience (CIS) | £15 |
| Bambuzie (Arxe Systems) | £22 | Mah-Jong The Game (CIS) | £19 |
| Battle Chess (Krisalis) | £22 | Man United Europe (Krisalis) | £19 |
| Black Angel (4D) | £26 | Micro Drive 2 (CIS) | £26 |
| Blaston (Eterna) | £15 | Mig-29 Fulcrum (ARM2/3) (Dom.) | £25 |
| Blitz (Arxe Systems) | £19 | Nebulus (Krisalis) | £19 |
| Boogie Buggy (4D) | £19 | Oh No More Lemmings (Kris) | £15 |
| Break 147 & Superpool (4D) | £26 | Omar Sharif's Bridge (Krisalis) | £22 |
| Bug Hunt, MoonDash (Min) | £15 | Orion (Minerva) | £15 |
| Bug Hunt in Space (Minerva) | £15 | Pandora's Box (4D) 2Mb | £19 |
| Cataclysm (4D) | £19 | Paradroid 2000 (Coin-Age) | £19 |
| Champions (Krisalis) | £22 | Pesky Muskrats (Coin-Age) | £19 |
| -Includes Man Utd, J Khan Squash, | | Play It Again Sam1 (Superior) | £19 |
| -Wild Class Leaderbrd & Boxing Mngr | | -Includes Conqueror, Rotor, | |
| Chess 3D (Micro Power) | £19 | -No Excuses & Hostages | |
| Chocks Away 2 (4D) | £19 | Populus (Krisalis) | £22 |
| Chocks Away Extra Miss(4D) | £15 | Powerband (4D) | £19 |
| Chocks 2 Compendium (4D) 2Mb | £22 | Quark (Oregon) | £19 |
| Chopper Force (4D) | £26 | Quest for Gold (Krisalis) | £19 |
| Chuck Rock (Krisalis) | £19 | Repton 3 (Superior) | £19 |
| The Crystal Maze (Sherston) TBA | | Repton 4 (Superior) | £19 |
| Cyber Chess (4D) | £26 | Real McCoy 2 (4D) 2Mb | £26 |
| Cyborg (Alpine) | £19 | -Includes Apocalypse, Holed Out, | |
| Cycloids (Software 42) | £19 | -The Olympics & Inertia | |
| Demon's Lair (4D) | £19 | Real McCoy 3 (4D) 2Mb | £26 |
| Dreadnoughts (Turcan) | £26 | -Includes Powerband, Nevryon, Drop- | |
| Dungeon (4D) | £26 | Ship & The WIMP Game | |
| Elite (Hybrid) | £32 | Real McCoy 4 (4D) | £26 |
| Enter the Realm (4D) 2Mb | £19 | -Includes Galactic Dan, Grievous | |
| E-Type Compendium (4D) | £19 | -Bodily ARM, Cataclysm & X-Fire | |
| Fervour (Clares) | £19 | Saloon Cars Deluxe (4D) | £26 |
| FRED (Software 42) | £17 | Saloon Cars Del Extra Courses | £15 |
| Galactic Dan (4D) | £19 | Serpents (CIS) | £15 |
| Games Wizard (Leading Edge) | £26 | Sim City (Krisalis) | £26 |
| GODS (Krisalis) | £19 | Spheres of Chaos (Matt Black) | £19 |
| Gribbly's Day Out (Coin-Age) | £19 | Stunt Racer 2000 (4D) | £26 |
| Guile (Dream) | £22 | Superior Golf (Superior) | £15 |
| Heimdall (Krisalis) | £22 | SWIV (Krisalis) | £19 |
| Hero Quest (Krisalis) | £22 | Technodream (Superior) | £19 |
| Holed Out Compendium (4D) | £19 | ThunderMonk (Minerva) | £15 |
| Ibix the Viking (Minerva) (OS2) | £15 | Tiles (Brain Games) | £15 |
| Iron Lord (Cygnus) | £15 | Top Banana (HEX) | £15 |
| Ixon (Software 42) | £19 | Twin World (Cygnus) | £15 |
| James Pond (Krisalis) | £19 | Virtual Golf (4D) | £26 |
| Kerbang (Eterna) | £15 | Waterloo (Turcan) | £15 |
| Krisalis Collection | £22 | X-FIRE (4D) | £15 |
| -Includes, Mad Professor Mariarty, | | Zarch (Superior) | £15 |
| -Pipemania, Terramex & Revelation | | Zool (Gremlin Graphics) | £20 |
| Last Ninja (Superior) | £19 | 2Mb - RAM required for RISCOS3.1 | |

Education

| | |
|---------------------------------------|------------|
| Adv. Playground 5+ (Storm) | £17 |
| Amazing Ollie 4+ (Storm) | £14 |
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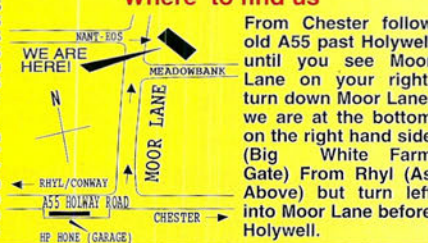
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New from Rheingold:



The spy on the Desktop

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Not so baby Bio

Another two modules for Bio. Something to merge sprite files and one to decode relocatable modules. How big can this thing get?

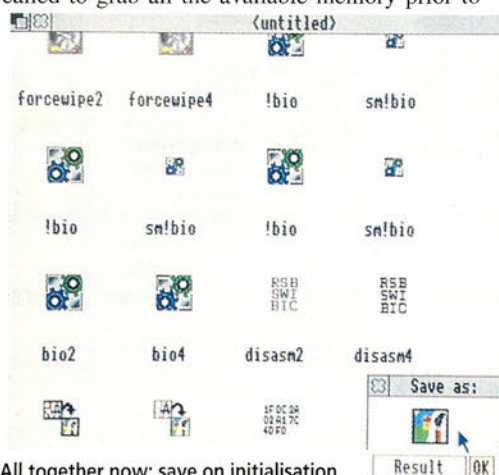
Over the last few months Bio has been building up into a suite of modules to enable you to get more out of your Arc. We have incorporated quickies to protect your files, to wipe them again, to convert text files to *Draw* files, and a lot more. This month we have one to decode relocatable modules, and one to merge your sprite files.

Sprite Merge

This is the first of a pair of *Bio* modules from Jim Daniels of Manchester, and the name is pretty self-explanatory. It takes a directory as input and merges all sprite files found therein into a single file; this is the output.

One very useful purpose of this utility is to gather together all the *Bio* module sprites and save them as a single sprite file (called *Biospr* say) inside *!Bio.Library*. Remember that *Bio* isn't bothered about where the sprites for its modules are, as long as it comes across them somewhere in *Library*. Putting them in a single file speeds up initialisation considerably. The same goes for template files by the way.

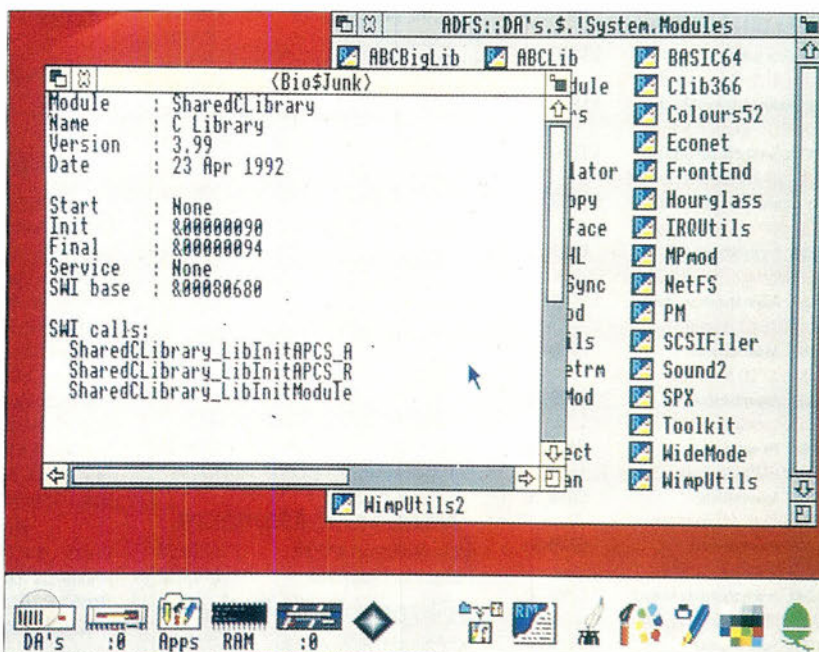
For those interested in how this module works, the directory flag is used in *FNsprmerge_args* to tell *Bio* that directories are suitable as input. The new call *FNclaim_memory* is called to grab all the available memory prior to



All together now: save on initialisation time by putting sprites in the same directory

scanning the directory. 32 bytes of this are used for the *OS_GBPB* call which scans a directory. The rest is used to copy individual sprite files onto the end of the merged file in the biggest possible chunks.

OS_GBPB 10 is used to examine a directory – if a sprite file is found it is merged; if a directory is found then *PROCsprite_scan* recurses.



Module Info

Jack's second offering decodes relocatable modules, spitting out a text file telling you all about them. Like *SprMerge* the new *FNclaim_memory* is called. Only 44 bytes of memory is required (to hold the module header) but it is good practise to use the call rather than DIM. Since only one *Bio* module can 'run' at once it is more efficient to use the common pool of memory where possible.

Only modules are allowed as input; the output is a text file which is sent to an editor if present. To examine a module just drop onto the icon (have a look in *!System.modules* for some examples). Alternatively, examine a module in memory by first saving with the **RMSave* command from Star Info July '93.

All the useful information about a module can be found in the header at the start. This contains pointers to name, help string, star command table, SWI table and so on.

Some intelligence is needed regarding SWIs. If a module does not support SWI calls the pointers to the SWI decoding table and so forth should be set to 0. In fact, they can just be left out and Risc OS spots that they are invalid because it finds machine code or unexpected data there). *ModInfo* does a quick check to see whether the SWI pointers are within the file.

All you ever wanted to know about your modules can now be divulged in an easy-to-read format. This month in *Bio*, *ModInfo* (shown above) enables you to take modules – the heart of the operating system – and investigate them further.

If you wish, for instance, to change the Pinboard module as we did in the August issue, by adding a desktop full of cockroaches – this application would provide you with vital information.

Using Bio

Bio is on this month's disc and as with all our previous *Bio* modules, the module programs are saved inside the *!Bio.Library* directory.

As usual, you can create your own sprites for Jim's modules, but some suitable ones are also provided on the Acorn User disc.



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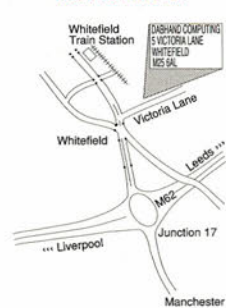
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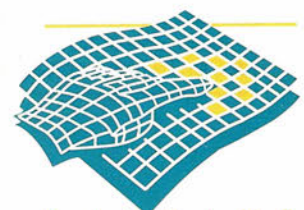


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A new dimension

Dave Acton wraps up our 3D module with a new Load command and a handy addition that gives you 2D views of work in progress

Over the past few months we have built up a simple language to define 3D objects and scenes and a relocatable module to allow them to be displayed on the screen.

Although it is perfectly possible to define complex shapes and indeed, whole 'worlds' textually, it soon becomes quite difficult to image what's going on. Furthermore, testing whether you've got your co-ordinates correct can be a slow business – editing a text file, saving, running a test program to display the file and so on. What is needed is some form of 3D editor, which is what this final part is all about.

On the monthly disc you will find a rudimentary 3D editor called *3Ded*. Use it to create 3D scenes and save them in the textual format we have developed over these articles.

I say 'rudimentary' because *3Ded* is only a very basic editor (in all senses of the word). However, *3Ded* does provide all the features you need to design the

sort of scenes we have come across. *3Ded* is not a desktop application – you will have to wait for version II.

Upgrading

Our faithful *BAU3D* module needs a few small additions to provide all the facilities required by *3Ded*. You'll find version 0.40 (complete with source) on the disc. In particular there have been two major additions.

Firstly, *3Ded* displays not only a three-dimensional view but three two-dimensional 'flat' views of the object being edited – from the front, the side and above. These views are produced without perspective and a new SWI call is used to generate them:

```
SYS "BAU3D_Render2D",
obj, offset, angle, scale
```

where *obj* is the address of the object to be rendered, *offset* and *angle* are the position and orientation of the object (as for 3D rendering) and *scale* is an additional scaling factor by which *x* and *y* 3D co-ordinates are divided in order to convert them to 2D ones. Remember, we do not apply perspective. The 2D call shares much of the code of the existing 3D one.

The other major change is an update to the *BAU3D_Load* call

which takes two more (optional) parameters:

```
SYS "BAU3D_Load", file$,
scale, objlist, max
```

where *objlist* is a pointer to a table to be filled with addresses of each object loaded. *max* is the maximum number of objects there is space for (number of bytes divided by four). The original load command only returned the address of 'world' but our editor needs to know where all objects are stored so they may be edited and included in other definitions.

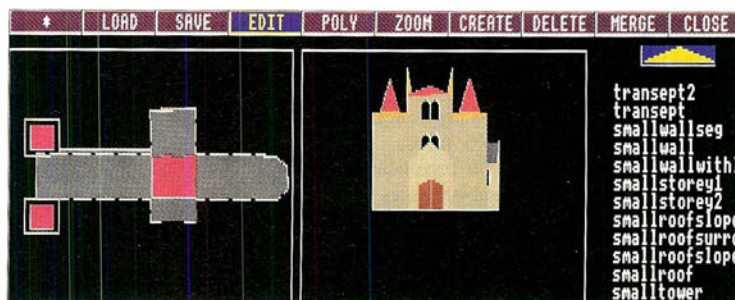
Using the editor

A set of instructions is on the disc, but here is a summary.

A menu is provided across the top of the screen. The main part of the screen is taken up with 3D and 2D views of the current object.

On the right of the screen (depending on mode) is a list of defined objects (which can be scrolled), colour selector (for colouring polygons) and so on.

Click on **LOAD** and a filename to load a 3D file – try our good old cathedral for a start. *3Ded* expects to find an *Objects* subdirectory. Select **Edit** mode and click on the name of an object with the middle button. Pan the view



The two-dimensional 'flat' views of our cathedral enable easier editing

either by dragging with the middle button or altering the offsets (bottom of the screen).

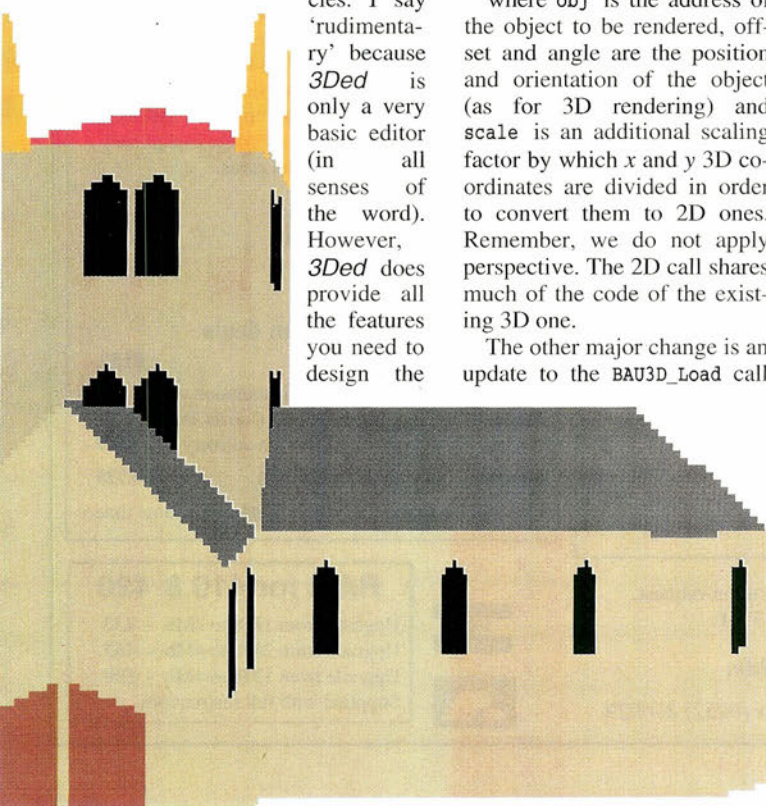
To select a subobject click with the left button on it. If more than one is below the mouse, click again to cycle through. Alternatively, use **CTRL S** to go through all sub-objects and polygons in sequence. Once selected, sub-objects may be moved by dragging with the right button. Or alter the position and angles shown at the bottom of the screen. If you click on the first co-ordinate or angle you can type in the three values manually, for greater accuracy. Use the **ZOOM** options or **CTRL Q** and **CTRL W** to alter the scale of the views. **CTRL A** and **CTRL Z** move an object/vertex 'in' or 'out' of the screen.

Click on **POLY** to create a new polygon. Existing polygons may be stretched by their vertices – remember only convex polygons are allowed by *BAU3D*.

Improvements?

As always, there is plenty of scope for improvement with *3Ded* since it only aims to provide the basics.

I hope it will be of some use though, as a first step towards 3D design.



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Other features include extra "background" operations. For example, discs can now be formatted or files copied while the machine is used for other purposes.

RISC OS 3 may be used on the A305, A310, A440, 400/1 series, A3000, A540 etc.

RISC OS 3 £41.70
A305, A310 and A440 owners please note. You will need to install the RISC OS Carrier Board in order to use RISC OS 3. The RCB may be used with any version of RISC OS. This carrier board is compatible with memory boards, ARM3 upgrades and does not in any way obstruct expansion cards ("modules").

RISC OS Carrier Board £18

A5000 systems & memory

A5000 with RISC OS 3, 80Mb hard disc, multisync monitor and ARM3. - £1399.
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Free 4Mb RAM upgrade included in the price.

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A compact board measuring just 104mm by 49mm, this design fits vertically in your machine. No soldering required. Unlike larger boards, there is no need to remove the disc drive. Four-layer design as specified by Acorn. A bare board (ie without the RAM chips fitted) is also available.

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A range of fast SCSI or IDE internal hard discs with a year's warranty, in sizes from 40Mb upwards. Complete systems supplied with all metalwork and cables. 400/1 machines merely require the drive and controller card. 300 series require a backplane.

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Prices exclude VAT.

A300 series upgrade column. 2Mb £89, 4Mb £128

Memory expansion

Extra memory is without doubt the most worthwhile addition to any A300 series machine. Some programs won't even run with only 1Mb, and 2Mb is a bare minimum. Certain applications, desktop publishing for example, benefit from a 4Mb system.

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*INFO

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STAR PROGRAM

VIBE ONE

Programs: ColTri
Description: Graphics demos
Author: Jan Vibe
Machine: 32-bit (Risc OS 3.1)

Three more goodies from the ever inventive fingers of regular contributor Jan Vibe.

The first, *ColTri*, follows on from our recent exploration of colours and dithering. It plots the now familiar red/green/blue triangle, but does so recursively. In other words, once the program is completed it returns to the beginning, starts over again and can continue *ad infinitum*.

The new Risc OS 3.1 dithering version of *ColourTrans_SetGCOL* is used to increase the range of hues available and we've slightly modified Jan's program so it recurses increasingly.

This means you can see all the joins being gradually smoothed out until a convincing RGB diagram is produced.

Recursion is typical of *INFO programs – each triangle, if larger than the current limit, is split into four and the process repeated.

DIRECTORY

Program: CSDmodSrc
Description: Desktop utility
Author: Carl Stockton
Machine: 32-bit

There are numerous programs around that enable you to set the Currently Selected

Directory (CSD) from the desktop, but most clutter your iconbar with yet another icon for what is, after all, a very trivial task.

The *CSDModule* cures this problem at a stroke – once it is loaded into the module area, the CSD can be set simply by moving the pointer over the required Filer window and pressing ALT-HOME.

It is easy to change this 'hot-key'.

The HOME key is detected just after the

module beeps when activated. If this becomes annoying, remove or comment out the SWI 256+7 near the end of *callback* and re-assemble the program.

As it stands, the program will attempt to set the CSD to any window – even non-Filers. It even continues to 'work' outside the desktop, happily beeping away when you press ALT-HOME. If you fancy a challenge, try altering the code so it issues a warning.

the Risc OS 3.1 parallelogram-plotting calls to produce lines of a desired width.

PROcline takes two pairs of co-ordinates and a width. Circles are filled at each end of the line, and a small amount of trigonometry is used to work out the appropriate parallelogram to fill in between.

AND SHARE ALIKE

Programs: SWI04-SWI09,
Version

Description: Utility module
Author: Dave Acton
Machine: 32-bit (Risc OS 3.1)

Last month we talked about how to communicate with the Shared C Library module and presented an example module: *SCL*. This month we look in more detail at how our module works and how you can add your own calls. We will also add some calls for you to use in your own Basic and machine-code programs.

As you recall, *SCL* is assembled in bits.

Each new SWI is assembled by a program segment called *SCL.SWIxx* and each segment must contain the following functions:

FNswixx_name returns the name of the SWI

FNswixx_init assembles any initialisation code needed for that SWI (when the module is installed)

FNswixx_vars defines any variables and declares any workspace needed

FNswixx_code assembles the

The familiar red/green/blue triangle plotted using Vibe One

start of *eventcode* with *TEQE R2,#&20*. The constant is the offset from the top-left-hand corner of the keyboard of the key required (ESC=&00, F1=&01 and so on). If you prefer to use ALT-TAB, change this to &26. The ALT part is detected further on by *MOV R1,#256-3*. Here, -3 is the INKEY value of ALT. If you prefer CTRL, substitute 2.

As you quickly discover, the

ng beep should the window under the pointer not be a Filer window, or if the desktop is inactive.

VIBE TWO

Programs: FatLines
Description: Graphics demos
Author: Jan Vibe
Machine: 32-bit (Risc OS 3.1)

FatLines is a useful demonstration of how to use

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SCL_memcpy, SCL_memmove, SCL_qsort and SCL_bsearch. If you are familiar with C you will know what these do – if not, read on.

The calls SCL_memcpy and SCL_memmove are fast memory-copying routines. The former is potentially the fastest but requires that the area being copied from does not overlap with the destination. Both calls take three parameters like this: `SYS "SCL_memcpy", to, from, n` where `n` bytes are copied from `from` to `to`.

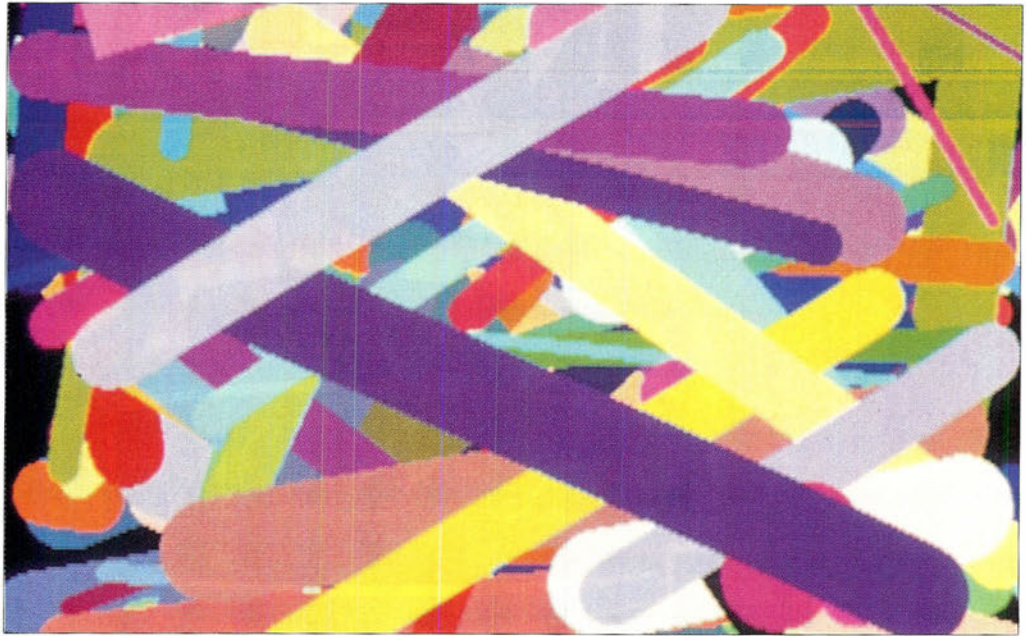
Two examples of higher-level functions are SCL_qsort and SCL_bsearch. The quicksort function comes as a standard part of C and SCL_qsort provides access to it.

The parameters needed are similar to those for the Risc OS calls OS_HeapSort:

```
SYS "SCL_qsort", n, base, t
where n word-size objects are
to be sorted. They are stored
from base onwards and are of
type t. t can either be a number
in the range 0-5 (see figure 2)
or the address of your own
comparison routine. The type t
has the following meanings:
0: Cardinal (unsigned integer)
1: Integer
2: Pointer to cardinal
3: Pointer to integer
4: Pointer to characters (case
insensitive)
5: Pointer to characters (case
sensitive)
```

Unfortunately (or maybe fortunately) the OS_HeapSort call is very efficient and, because of the overheads involved, is much quicker than SCL_qsort. Nonetheless, it is a useful example and much of the code required is shared by SCL_bsearch below.

SCL_bsearch takes the same



FatLines by Jan Vibe. Aptly named really

first three parameters as SCL_qsort plus one more: the key to search for. It returns a pointer to where the key was found, or 0 if it was not.

A binary search is used: so the array is repeatedly divided in two till the key is found. If there is more than one match it is not defined which of these will be returned.

How it works

C is well-behaved regarding workspace. A stack made up of chunks is maintained and extended whenever a C function spots that space is running out. Therefore, much of the initialisation routine for our SCL module is standard code for setting up the stack ready for calling C functions. The same goes for the SWI handler. By the time the code in SWI00, SWI01 and so on is called, everything is set up

ready for communication with the C library.

Workspace is claimed using OS_Module 6 for two reasons. First, certain values need to be stored somewhere, including 'relocation offsets' which will be needed later to set up the stack ready for calling our SWI routines. Also, workspace is needed for 'static' C data.

Adding new Swis

To add a new SWI call is pretty easy – just follow the examples given. There exists a standard (called the Arm Procedure Call Standard) which defines how individual routines (compiled by C or other languages) should behave, what registers they use and so on. There simply isn't space here to go over the APCS in detail, but it is worth mentioning a few key points so your code is legal.

Under the APCS registers, r0-r3 (called a1-a4) are junk registers and may be corrupted. They are used to pass up to four parameters to subroutines and a1 is used to return single values. Registers r4-r9 (called v1-v6) are known as the variable registers and may be used, but should be preserved.

Registers r10 and upwards are 'special'. Aside from the usual sp, link and pc, r10 is used as the current stack limit (for checking when space is running out) and r11 is the 'frame pointer' which is used to keep track of the chain of outstanding subroutine calls.

Needless to say, avoid these registers and your routine should preserve all flags too (with `MOVS pc, lr` or the like).

As an example, look at SCL_qsort. Each SWI is entered with r0 containing the SWI number (not very useful), r1 pointing to where the entry registers are stored, and r2 pointing to the private module word. The C function `qsort()` is defined as:

```
void qsort(void
*base, size_t nmemb, size_t
size, int (* compar) (const
void *, const void *))
which, seeing as it has four
parameters, translates into:
r0 -> base
r1 = number to sort
r2 = size of each element
(always 4 here)
r3 -> comparison routine
```

If we have chosen to use a standard search, the appropriate address is calculated from `compare_table`. The comparison routine is called with r0 and r1 pointing to the two members to compare. It should return with r0=-1, 0 or 1 depending on the result of the comparison. Like the main SWI code, the comparison routines obey the rules regarding registers.

If more than four parameters need to be passed, use r4 and upwards but push the values onto the stack. SCL_bsearch needs to pass five parameters and shows how it is done.

Your routine should return with r0=0 if all went well. If not, r0 should point to a standard error block. Any

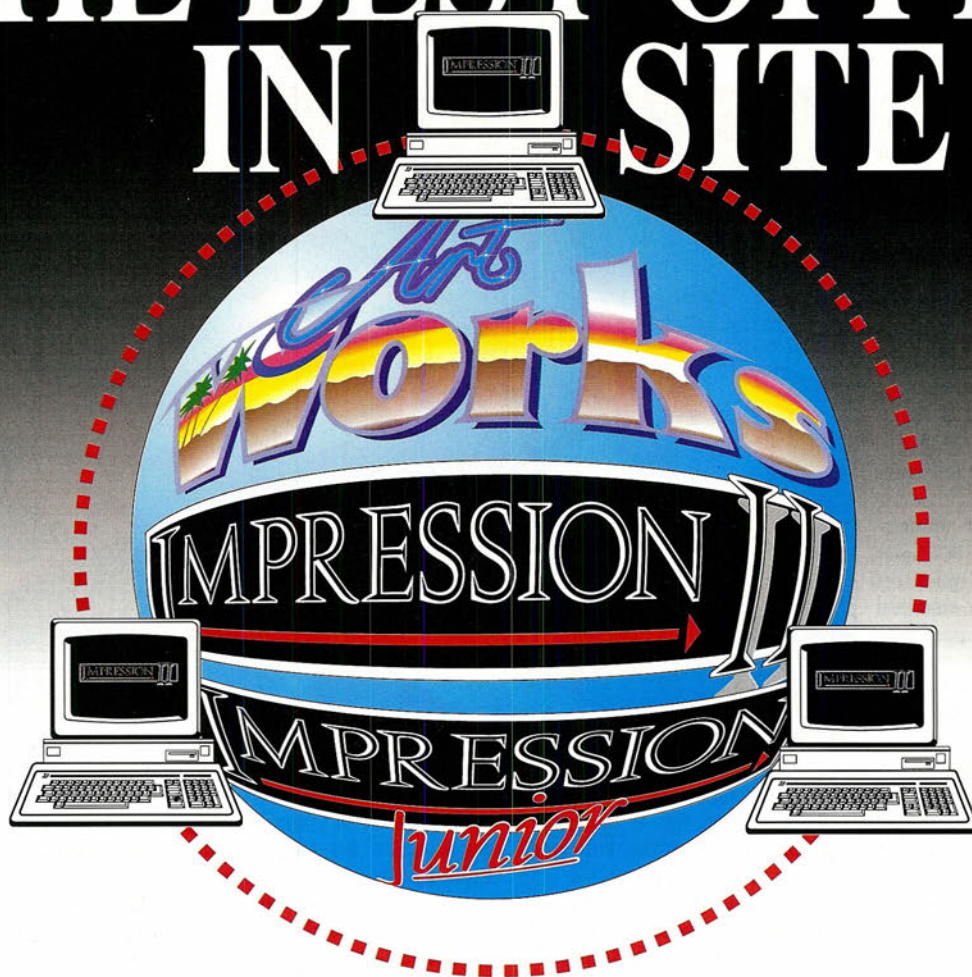
Figure 1

Valid printf conversion characters
Character Meaning
%d decimal integer
%o octal integer
%x hexadecimal integer
%u unsigned decimal integer
%e floating point number with exponent
%f floating point number without exponent
%g use the shorter of %e or %f
%c single character
%s string

Figure 2

Valid fopen flags
Flags Meaning
r open text file for input only
w create text file for output
a append – open text file for output, starting at current end
rb, wb, ab as above, but file is 'binary' not text
r+, rb+, ab+ open file for update (read/write)
w+, wb+ create file for update (read/write)
a+, ab+ open/create file for update starting at current end

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values that need to be returned should be stored over the entry values (remember, on entry, r1 points to these). SCL_bsearch returns a value using the STR r0, [r9, #0] instruction.

New calls

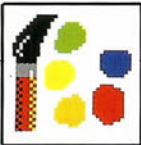
The latest version of SCL has six more SWIxx listings (04-09) and a new SCL.Version. Enter and save these in SCL, then CHAIN "SCLsrce" to reassemble the module.

Two of the most versatile functions the C language supplies are printf and scanf – the general purpose input and output calls. Those already familiar with C, can skip the following descriptions.

printf takes a control string, then zero or more parameters. The control string can contain plain text to be printed and special conversion characters, used to display numbers and strings. A simple example in C would be:

```
printf("%d plus %d equals %d\n", 2, 2, 2+2);
```

which would print: '2 plus 2 equals 4'. The % symbol is



Paint tip

An exceedingly useful quickly from Mike Williams:

'Have you ever noticed how difficult it is to trim the left and bottom edges of a sprite in Paint. The right and top edges are easy because you can use Adjust size. I used to struggle with Delete rows and Delete columns which are much trickier to use.

'Then I realised that it is much easier to perform a Horizontal and Vertical flip, then use Adjust size then flip back afterwards. It's obvious when you think of it, but saves a lot of fiddling about.'

used to prefix a conversion sequence and the common sequence %d means 'put a decimal number in here'. The parameters after the control string are substituted one by one into the output string. Figure 1 contains a full list of conversion characters.

The SWI call "SCL_printf" works in the same way, taking as the first parameter a control string of the above format, then up to seven more parameters as needed. For simplicity, floating point numbers aren't supported, but can be added without too much trouble if you need them. One important point is that C expects strings to be null-terminated (and they may contain newlines). So remember to add a CHR\$0 on

the end, like this:

```
SYS
"SCL_printf", "F-
our squared is
%d"+CHR$10+CHR$0-
,4^2
```

This call is useful to machine code programmers, since it simplifies the display of numbers and strings. Even Basic programmers may find it useful as printf supports various formatting options. Note that CHR\$10 is used for a newline, rather than "\n" which would be appropriate in C. In fact, the "\n" is converted to CHR\$10 by the C compiler.

If a number is inserted between the % and d (h, o, for instance) then the output value is right justified in a field of that width. For example, %5d right justifies in a field 5 characters wide. %-5d on the other hand will left justify in a field of 5. If you insert a 0 immediately after the % the padding will be done with zeros instead, so %03d might give '001' or '042'.

The opposite function to

printf is scanf. This takes a control string and parameters in exactly the same way. The only difference is that the parameters are addresses of where the input values are to be stored. For example:

```
DIM v% 4
```

```
SYS
```

```
"SCL_scanf", "%d"+CHR$10+CHR$0, v%
```

```
PRINT !v%
```

would be equivalent to the traditional Basic line:

```
INPUT val% PRINT val%
```

Unlike Basic's INPUT command though, scanf can be instructed to skip bits of text in the input string. Extra white space is ignored and any text given in the control string, if

matched, will be ignored too.

This isn't particularly useful for scanf,

but there are two more functions – fprintf and fscanf – which behave exactly like printf and scanf but use a file for input and output.

fscanf may be a considerable code saver, since reading information from a file (for configuration purposes for example) can quickly take up a lot of code.

The SWI calls SCL_fprintf and SCL_vscanf are provided and these take an extra first parameter, a pointer to a file handle block. In C terms this parameter is of type (* FILE), but in real terms it is the address of a small descriptor set up by the C library when a file is opened.

So you can open and close a file for use with fscanf and fprintf, two more calls, fopen and fclose, are provided. They are used like this:

```
SYS
```

```
"SCL_fopen", "filename", "flags" TO handle
```

```
SYS "SCL_fclose", handle
```

The "flags" string describes how the file is to be opened and may be any of the valid sequences in Figure 2. To show how all of these calls may be used, the program FileTest creates a simple text file, writes some values and strings out, then reads them back in.

Its operation is very easy to follow, but it is worth making note of a couple of the features of scanf and fscanf.

First, you can see that the different conversion codes can be used in the same way as with printf in order to read different types of values from a file.

also note the use of the sequence call any\$ which contains "%*[\n]" (where \n means a newline character, Ascii code 10).

The * after a % means read this value but then discard it, so a number or string can be skipped. The square brackets can be used instead of %s for reading strings.

Characters are only accepted if they are included within the brackets or – if the set is preceded by ^ – only if they are not in that set.

Problems

Do you ever have that feeling that your machine is out to get you? Well, consider this: while developing a module containing a section of code that generated sound effects in the background under events and callbacks, my machine gave me the following error message: Error: SWI &40134 not known (Error Number &1EError: Internal error: abort on instruction fetch at &007C9204 (Error Number &80000001) Spacing and missing close bracket are reproduced verbatim. Can anyone beat this... or indeed work out what it means?

In this example, the rest of the current line is skipped (in other words, keep reading characters as long as they aren't new lines).

For decoding parameters separated by commas, fscanf is very flexible.

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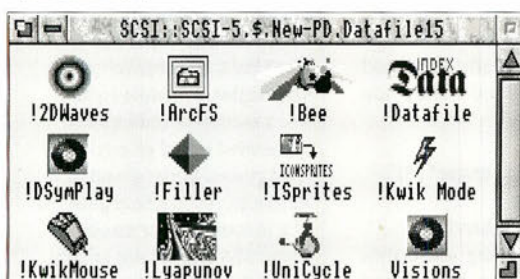
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VIBE THREE

Programs: Moire
Description: Graphics demos
Author: Jan Vibe
Machine: 32-bit
Moire is a short demonstration

of the Moire fringes, produced when two sets of nearly parallel lines are brought together.

A sprite is simply created with line pattern on, then is repeatedly plotted at slightly-differing positions.

BREAKING UP

Program: DisInt
Description: Fade demo
Author: Mark Hobson
Machine: 32-bit
 The 'fade' routine is a com-

mon feature of games and demos. This example is pretty, concise and quick.

Two machine-code routines are assembled – swop which swaps screen banks and change, which fades between banks.

In detail

We thought Mark Hobson's *DisInt* was a good subject for an In Detail, not least because it features Basic and machine code and might therefore be educational to a variety of users.

60 - select Mode 15. We actually need two Mode 13 banks, so choosing Mode 15 is a concise way of clearing both screens in one go.

70 - switch the cursor off.

80 - switch the hourglass on.

90 - assemble the code.

100 - initialise a table used in the fade.

110 - hourglass off again.

120-130 - choose Mode 13 and switch that blasted cursor off again.

140 - set up a simple error handler – important since the error message may appear on the hidden screen bank.

150 - call the screen swap code; in this instance just so we can read the start address of one bank.

160-180 - store the start address, swap again and store the start address of bank 2.

190-230 - draw a pattern for one of our demo screens, including some random circles.

240-270 - add some text.

280 - fade our first screen on.

290-370 - create our second screen, this time with some rectangles.

380-410 - repeatedly fade between screens, waiting five seconds or until a key is pressed each time.

450 - the procedure to assemble the code.

460 - define the amount of memory needed for the machine-code.

470 - set the speed: this is the number of stages the fade will take and can be changed as you wish.

480 - dimension some space for the code.

490 - the main assembly loop; note that the OPT value goes from 8 to 10 (rather than the traditional 0 to 2). With bit 3 set, the variable L% is used as a limit on the assembly – if the program counter exceeds the dimensioned memory, a friendly error message (rather than Address exception, or a spurious

No such variable) will be given.

500-520 - set up P% and L% and begin assembly.

530 - the fade routine: preserve link register.

540 - point R4 at our fade table.

The screen is divided into sixteen portions – four across by four down. These are faded identically, although the fade is quick enough for you not to notice. For each pixel with a section there is a value in the table at R4 from 1 to speed which determines at which stage the pixel is faded from one screen to the other. This method ensures that no pixels are left unfaded at the end, and that the process is a steady one.

550 - R5 is the fade counter.

560 - the main loop, executed 'speed' times. R2 is the y counter, running from 63 to 0 (one quarter of the screen height).

570 - the y loop. R3 is the x counter, running from 79 to 0 (one quarter of the screen width).

580-610 - the x loop. The stage number for pixel R2, R3 is looked up in the table. If the pixel isn't to be faded this time, jump to skip.

620 - point R8 at the table offsets.



This contains 16 offsets which are used to fade the 16 screen sections simultaneously.

630-680 - set up R0 and R1 to point to the addresses of the pixel being faded on the two screens.

690 - exit assembler temporarily.

700-710 - this next piece of code is assembled four times for speed of execution.

720 - read four offsets from the offset table into R9-R12.

730-750 - read the pixel at offset R9 from each screen then swap them over.

760-880 - repeat for offsets R10, R11 and R12.

890-900 - repeat four times.

910 - back to the assembler.

920-970 - decrement the various counters, looping back appropriately.

980 - exit.

1000-1010 - the base addresses of the two screen banks.

1030 - the offset table. FNarray is used to reserve memory.

1040 - the fade table.

1050 - the screen bank swapper.

1060-1080 - swap bank, store back.

1090-1120 - set bank for writing.

1130-1150 - set bank for display.

1160-1180 - read the screen start address and put at screen.

1210 - the current bank number.

1220-1230 our list of VDU variables to read, terminated with -1.

148=screen start.

1250-1260 - next pass.

1270-1310 - set up the offset table.

1380-1420 - PROCinit – randomises the fade table.

1440 - a text printing routine. a\$ is to be displayed

(in colour c% and tint t% with a black border) centrally at vertical position y%.

1450 - find x% so text is centred.

1460 - allow characters to be put at graphics cursor.

1470 - select black.

1480-1530 - display text in black nine times, with X and Y offsets of -4, 0 and 4 in all combinations. This is a neat way of adding a border to text.

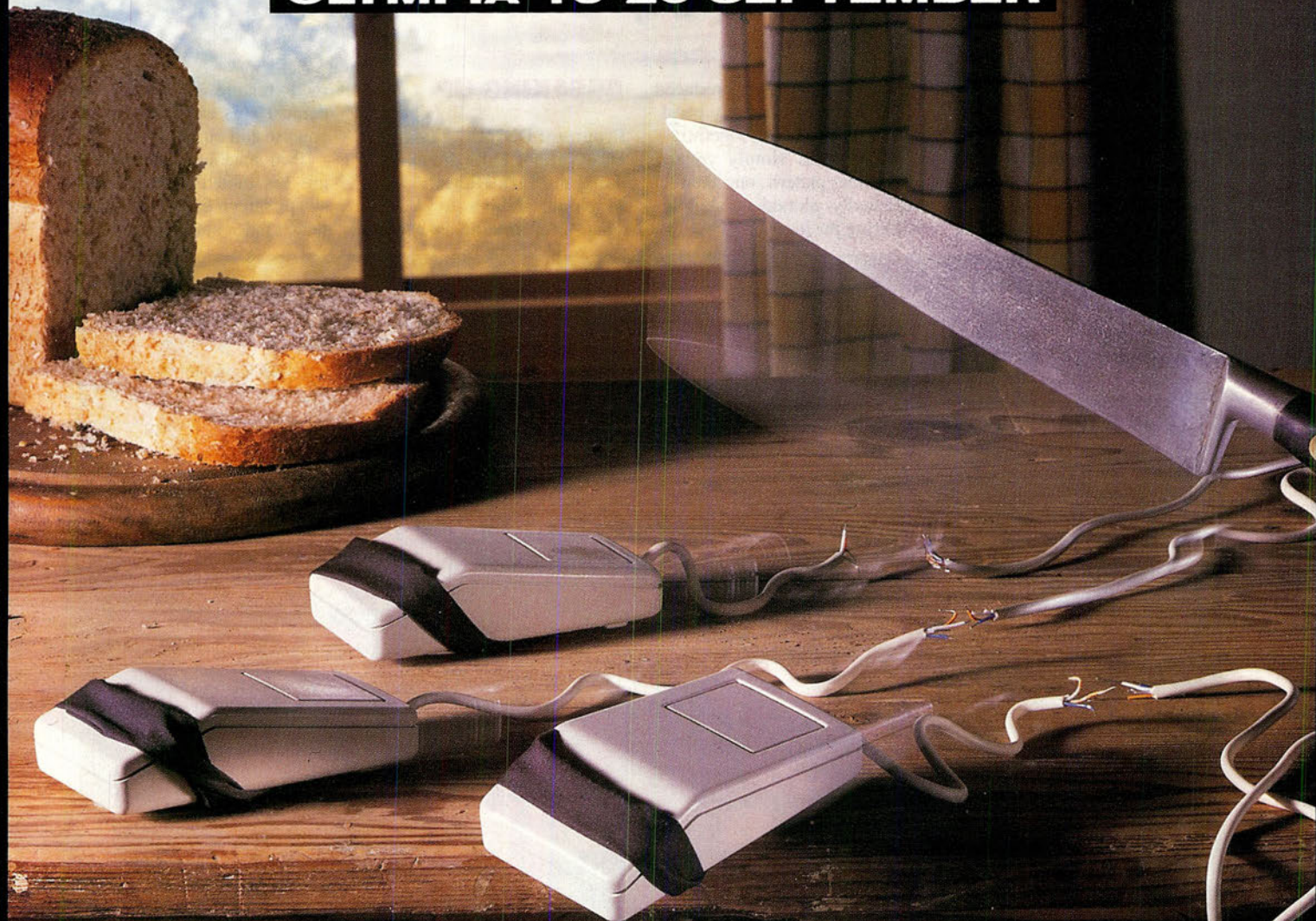
1540-1560 - now display the text in the middle using the given colour.

1570 - separate graphics and text cursors again.

1580 - switch that darn cursor off again! (VDU 4 re-enables the cursor, rather annoyingly.)

1610+ - tidy up the screen and end.

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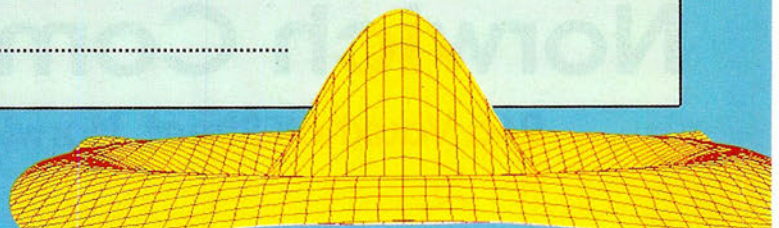
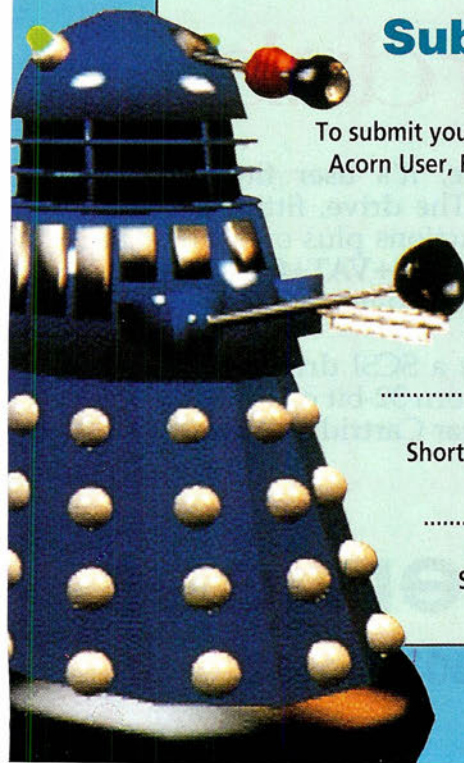
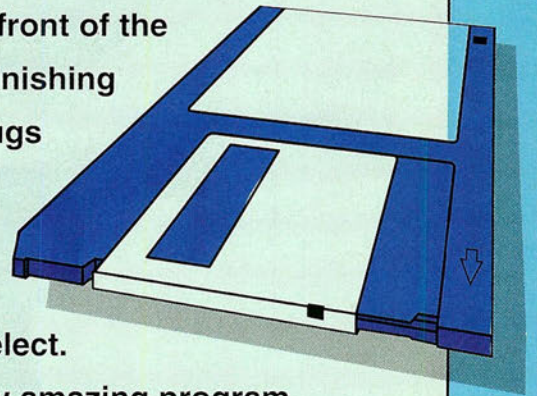
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Child's play

Roll up, roll up for the thrills, spills and fun of the fair all crammed into ESM's art package *Kidpix*. Wacky pencils, moving snakes, special effects accompanied with innovative and crazy sounds make this one of the most experimental – and noisiest – experiences on the Arc for a long time.

For your money, an extremely reasonable £35 + VAT inclusive of site licence, you receive a program disc and an extras disc plus the excellent *Teachers and Menu Guide* in ring-binder format with a chapter on curriculum projects including Totem Poles, Picture Poems and Theme Quilts. *Kidpix* is aimed at children aged from four to 11 plus a good proportion of adults too.

Once you have installed the program onto the iconbar selecting on the 'smiling diamond face' takes you into the Artroom where everything is clearly labelled: the twelve tools are on the top left and the colour palette underneath. At the bottom of the screen are the 150 basic tool options, loads of rubber stamps resembling pictograms, and text options. The large clear Pencil, Brush, and Eraser tools are self-explanatory; others such as the Moving Van and Electric Mixer encourage that 'let's try it out' spirit of adventure. Most of the

A kids' art package that doesn't mean sponging crayon off the wallpaper. Adults find it addictive too, as Pete Worrall finds out



Ten top features

There are so many features that it is impossible to describe them all but here are my current top ten favourites.

- 1 Drippy Paint.** Realistic clean-dripping paintbrush for that Jackson Pollock effect with ploppy sounds.
- 2 Kaleidoscope.** Automatic symmetry drawing; an excellent conceptual tool with alien hum.
- 3 Magnifying Glass.** Enlarges and prints areas of screen.
- 4 Alphabet Line.** Type in a line of text and paint in all directions with it.
- 5 Venetian Blinds.** This slices your drawing into moving horizontal stripes using a Blues Brothers face while making silly sounds.
- 6 Firecracker.** A stick of dynamite blows up the screen with concentric circles; then Bang! It's gone.
- 7 Undo option** with face shouting in desperation: 'Oh No!'
- 8 Geometry.** Produces random geometric drawings a bit like Spirograph pictures, along with a strange whistle.
- 9 Caterpillars.** Symmetrical caterpillars follow you around the screen making patterns.
- 10 Dot-to-Dot.** Create your own fun mystery pictures for the school magazine competition; when complete, the line connecting the numbered dots disappears.

features are soundtracked, such as the talking alphabet; some are animated, like the fractal trees with their delightful tinkling sounds. In many respects this could be an early learner's first multimedia experience.

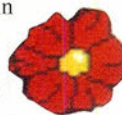
Art has never been so easy and everything is configurable, so you can even add (and switch off) your own sound effects using Clares' Armadeus Sound Sampler or Oak Solutions' Oak Recorder. 'Small Kids Mode' eliminates the problem of small fingers accidentally opening a menu.

An excellent Stamp Editor, which resembles graph paper lets you edit the rubber stamp pictures or even create personalised stamps patterns, great for textile design. Saving

your masterpieces is easy through a special *Kidpix* Area: simply type in a name and select OK.

Kidpix contains many advanced features such as Cut and Paste, Edge Detection, transparent effects and a range of flood-fills all designed for ease of use. In the classroom it lends itself to short sessions where time is at a premium and little adult supervision is required.

The manic picture of a typical *Kidpix* user only took 20 minutes using the symmetry tool for the face, rubber stamps for the hair and flood-fills. ESM is planning further additions to *Kidpix* including 'theme packs' and a *Kidpix* Companion Disc. I'm hooked; this art package is an experience.



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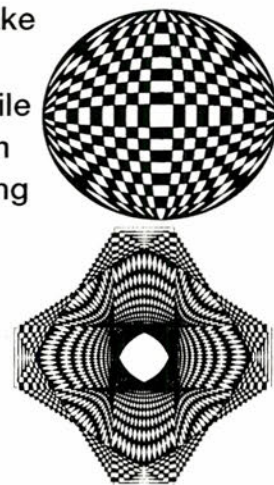
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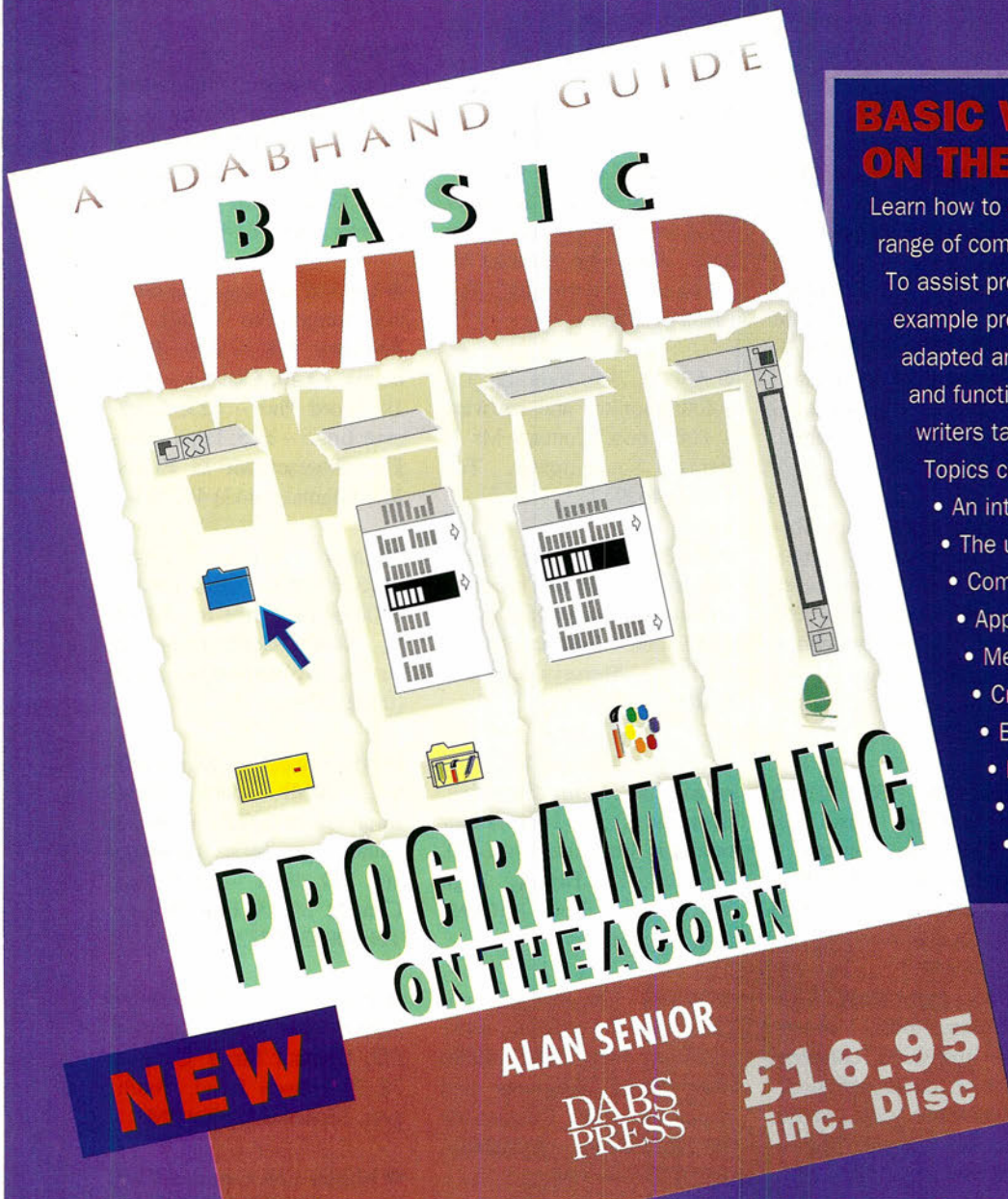
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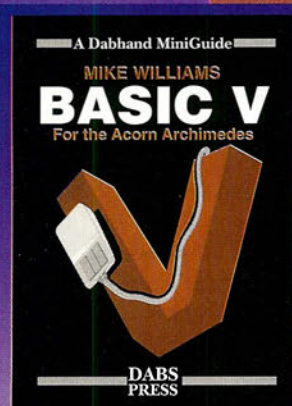
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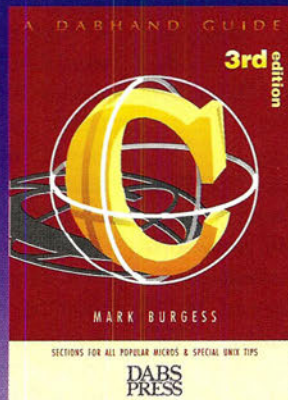
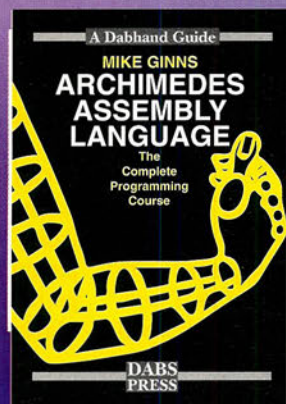
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● BBC software for sale, popular discs at reasonable prices, also Replay. Contact Mr M Davies, Tunbridge. Tel: (0892) 532786

● BBC, twin 40/80-track disc drive, 6502 second processor, Microvitec colour monitor, Epson FX80 printer, Rom/Ram board, software and manuals – £250 ono. Contact Mr P Sandford, Lancaster. Tel: (0524) 68354

● BBC, countless games, cassette case, all leads, cassette recorder and twin joysticks, magazines, bargain – £80. Contact Mr G Oddoye, Edinburgh. Tel: 031-229 6639

● 512K upgrade, Gem software, mouse, virtually unused – £100 ono. Contact Mr J Hicks, Bath. Tel: (0225) 330445

● Paradroid 2000 – £10, Quest for Gold – £10, Lotus Turbo Challenge II – £10. Contact Mr N Westley, West Midlands. Tel: (0564) 776360

● Donate your used computer to a really isolated computer enthusiast in Romania. Contact M Stanculescu, Str. Ciurkeasa, NR.3, Sect 4, OP7, Cod 75445, Bucuresti, Romania.

● Wanted: Magnetic Scrolls' Wonderland, in good condition. Mr J Macarthur, Hertfordshire: (0992) 587624

● Archimedes 410/1, 4Mb Ram, 42Mb hard drive, Risc Os 3.1, Arm 3, Vide enhancer, Taxan 775 monitor, 1st word Plus VII, Masterfile 3, with Panasonic KX-P1540 printer – £1000, without printer £900. Contact Mr J Kane, County Derry. Tel: (0265) 832137

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● Chocks Away Compendium – £15, Holed Out – £10, Flight Sim Toolkit – £20, Corruption – £10, Waterloo – £10, Lemmings – £15 or all – £65. Contact Mr J Layton, Warwickshire. Tel: (0789) 841197

● A3000, colour monitor, 2Mb Ram, Scsi interface, PC Emulator, Impressions, plus software – £650 ono. Contact Mr A Oliver, Stevenage. Tel: (0438) 357500

● Disc drives: twin, switchable 5.25in and 3.5in mounted in a Watford plinth, includes power supply – £75. Contact Mr J Buckley, Stockport. Tel: 061-437 6821

● Wanted: External Archimedes keyboard in good condition. Contact Mr P New, Cornwall. Tel: (0566) 776177

● Bargain: Approximately 90 games for the BBC, 60 plus on tape, 30 plus on disc, many popular titles, worth £600 when new accept – £40. Contact Mr T Moore, Devon. Tel: (0626) 862474

● A3000, 2Mb, serial V/G, colour monitor, stand, original boxes and manuals, good condition, Misc H/W, two ST506 podules, 10Mb hard disc, all for – £500 ono. Mr T Steele, Herts: (0279) 658209

● A3000, 4Mb Ram, 45Mb Scsi hard drive, serial port, Risc Os 3.1 and colour monitor – £600 ono. Contact S Beech, Lanarkshire. Tel: (0689) 384145

● Wanted: A3000 and monitor, needed for school use, good condition, not expensive. Contact Mr J Dexter, Nottingham. Tel: (0602) 292657

● Master 128, Acorn dual drive in plinth, Acorn colour monitor, Panasonic daisy wheel printer, all immaculate – £340. Contact Mr R Smith, Essex. Tel: (0245) 224781

● A3000, 2Mb, manuals, software – £350, Artisan II, Holed Out (with extra courses) – £10 each, Adventure/Arcade games – £5 each, Z88 with mains adaptor – £75. Contact Miss A Leigh, Herne Bay. Tel: (0227) 374172

● Archimedes 440/1, OS53, 50Mb disc, Taxan colour monitor laser direct scanner, Pineapple digitiser, Ovation DTP, Acorn C plus lots more, only – £999. Contact Mr M Piggott, Essex. Tel: 081-550 2534

● Populous, unused, boxed – £15. Contact Mr M Gunning, Leeds. Tel: (0532) 782593

● PC Emulator V1.8 with Dos 3.3 – £50, Oh No More Lemmings, Chuck Rock, Pacmania – offers. Contact Mr M Kohut, Belper. Tel: (0773) 829217

● Master 128, 6502 co-processor, Rom/Ram board, external 512 board, twin 40/80 track disc drives, colour monitor, discs, books, Roms, programs and PC programs – £550. Contact W Purdue, Surrey: 081-393 4522

● Triple processors – Master 512, turbo board in external

adaptor, colour monitor, twin 800k disc drives, star LC10 printer, games, software, Rom images, manuals – £500. Contact Mr P Ellis, Somerset. Tel: (0749) 674677 evenings

● Master 128, Microvitec colour screen, 40/80 disc drive, Pascal, Viewsheet, interword, View, all manuals, Epson FX80 printer – £325 complete – £250 without printer. Contact C Jarvis, Dorset. Tel: (0425) 272593

● Acorn PC Emulator plus manual – £50, 1st Word Plus also with manual V2 – £25. Contact Mr D Livesey, Clwyd. Tel: (0824) 702246

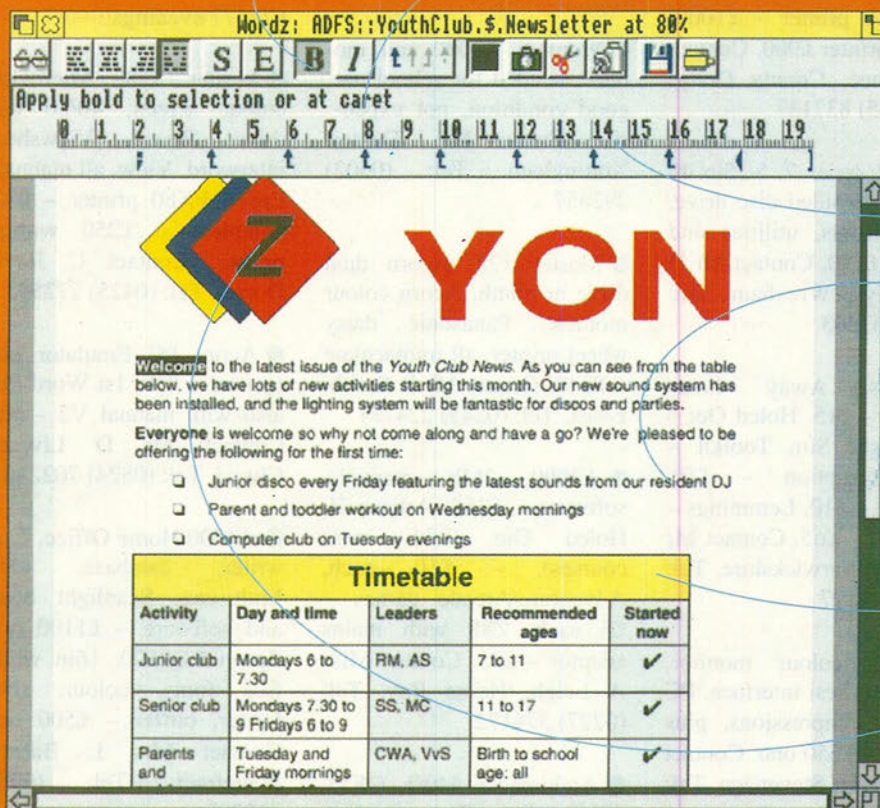
● A4000 Home Office, Easiwriter, database, 4Mb, Multiscan, Scanlight board and software – £1100 ono, Epson LQ2500, 16in width, five fonts, colour, sheet feeder, buffer – £500 ono. Contact Mrs L Barrow, Pontefract. Tel: (0977) 612292

● Wanted: Old Archimedes computer for school teacher, A3000 or 400 preferred, can collect. Contact Mr R Jones, Reading. Tel: (01374) 153365

● A3000, 4 Mb Ram, colour monitor and stand, Learning Curve software, all original discs, excellent condition – £650. Contact C Whitehead, Cheshire. Tel: (0606) 79936

● BBC B with 40-track disc drive, joystick, monitor plinth, software including Mini Office – £100. Contact Mr P Seale, Burgess Hill. Telephone: (0444) 870828

● 120Mb Quantum IDE hard disc drive with cables – £160. Contact Mr R Paddle, Kent. Tel: 081-460 2116



At last, the word processor the Archimedes has been waiting for. A program that's so easy to use you'll be able to create great-looking documents the first time you use it. The facilities used most are in the *button bar*, and the *status line* gives you instant feedback. Just click and drag in the *ruler* to set margins and tabs; click on a button to cut and paste - it's that easy.

Wordz has all the features you'd expect from a state-of-the-art word processor. The powerful style editor gives you complete control over all aspects of your text; *font*, *spacing*, *margins*, and *colour*. Unparalleled control over *tables* including dragging to resize columns and rows. Speedy check-as-you-type or whole document spell checking. Import *pictures* and text from other programs, including PipeDream. Wordz is the first of a family of programs which share the same easy user interface and include dynamic data linking. The spreadsheet Resultz will be available in mid-1993. Wordz costs £99+VAT. "Is it easy to use? It's falling-off-a-log easy to use."

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● Acorn 1Mb Ram upgrade board for A3000 - £30 or nearest offer. Contact Mr N Kadomtsoff, London N16. Tel: 071-254 5020

● Acorn PC Emulator - £35, Genesis - £25, Swiv - £15, 1st Word Plus (V1.2) - £30, all for - £90. Contact Mr A Park, Lancashire. Tel: (0695) 421902

● Master 128 - £185, dual 5.25in floppy drive - £65, single 5.25in floppy drive - £35, Turbo co-processor - £49, Acorn Teletext - £39. Contact Mr P Skirrow, Suffolk. Telephone: (0394) 380307 work

● Impression Junior V1.14 - £25, Pipedream V2.2 - £20, Acorn Ansi C V1.54A - £20, Euclid V0.97 - £10, Logistix V1.15 - £30, all with complete packaging and documentation. Contact Mr R Ferrari, Wokingham. Tel: (0734) 790082

● BBC B, 40/80 track double disc drive, cassette Panasonic 1124i printer, Rom/Ram board, all manuals, View, Starbase, Amx Stop Press, disc/tape games, magazines etc - £300. Contact Mr J Wood, Kent. Tel: (0732) 845828

● BBC Acorn User magazines for sale, Issue 2 (Sept 82) to Issue 113 (Dec 91), three missing, complete set only - £25. Contact Mr J Sorsby, Rotherham. Tel: (0709) 370112

● Master 512, 3.5in and 5.25in disc drives, colour monitor, reference manuals 1and 2, Shareware, games - £350 ono. Contact Mr A Graves, Great Yarmouth. Tel: (0493) 652920

● A5000, multiscan monitor, 40Mb hard disc, 2Mb Ram, wide variety of software, hardly used, excellent condi-

tion, only - £1350. Contact Mr P McCormack, Surrey. Tel: 081-549 5643

● BBC B, Watford DDFS, Interword, Zif socket, plinth, cassette, green screen monitor - £100. Contact Mr J Lewis, Bournemouth. Tel: (0202) 578060

● 3.5in 800k Cumana disc drive and second drive interface for A3000 - £50, Arcade Games Creator - £15. Contact Mr J Grimmett, Sutton Coldfield. Tel: 021-351 5483 after 6pm

● Archimedes 310, colour monitor, discs manuals, Panasonic KX-P1081 dot matrix printer, no mouse - £500. Contact Mr P Rhodes, Surrey. Tel: (0372) 274554

● Programmers reference manual (Risc Os 2) - £40, Acorn Ansi C (V3) - £40 or any offers? Contact Mr G Adams, Lytham. Tel: (0253) 734952

● A3000 Atomwide 2Mb expansion board, unused - £20, Deskedit II - £15. Contact E Cobbold, Great Yarmouth. Tel: (0493) 740557 evenings

● Hybrid music synthesiser, keyboard, Rom, software with BBC B, colour monitor, 5.25in and 3.5in disc drives, lots more music, hardware and software - £350. Contact

Mr G Dixon, Manchester. Tel: 061-941 1716

● A3000, 2Mb Ram, Risc Os 3.11 and user guide, original application discs - £499. Contact Mr K Park, Merseyside. Tel: (0695) 424356

● A5000 plus multisync monitor and Risc OS 3. Bargain! Brand new, unused, only - £149. Contact Mr R Darlington, Manchester. Tel: 061-799 9845 evenings, weekends

● All Archimedes users are invited to join the Archimedes Users Club. For more information on the club, contact Mr J Michalski, 6 Furzeland House, Sheephouse Way, New Malden, Surrey KT3 5PH

● Game Swap: I have originals of Enter the Realm and the excellent Ixion with cheats. I'll swap for any decent games. Contact Mr E Pepper. Tel: (0844) 208457

● Cad Autosketch for Risc Os machines, full manuals discs - £15. Contact Mr M Cowell, High Wycombe. Tel: (0296) 623700

● Wanted desperately: Saloon Cars Deluxe, for sale Quest for Gold - £10. Contact Mr A Khan, London SE22. Telephone: 081-693 8164

● Wanted: Software for Master 128, especially utilities, educational but anything considered, must be reasonably priced.

Contact Mr K Sadler, Darlington. Telephone: (0325) 462974

● A3000, 2Mb, colour monitor and stand, very good condition, 1st Word Plus, DTP and games - £550. Contact Mr I Wakefield, Beverley. Telephone: (0482) 865162

● Master 128, Cumana 40/80 track disc drive and Cub colour monitor - £300 ono. Contact Mr D Brown, Norfolk. Telephone: (026387) 4122

● Archimedes 440/1, 53Mb hard disc, 4Mb Ram, Risc Os 3.1, Arm 3 - £800 ono. Contact Mr C Weatherby, Cambs. Telephone: (0354) 693653

● Z88 with 128 Ram Pack, mains unit, RS232 cable, manual - £95. Organiser II XP, RAMPak, Datapak, mains unit - £65. Contact R Newmark, Sunderland. Tel: 091-536 2066

● Games: Swiv, Pandora's Box - £10 each. Drop Ship, Boogie Buggy, Inertia - £6 each.

Write with SAE to JP Parkinson, Bodarfryn, Talysarn, Caernarfon, Gwynedd LL54 6LE

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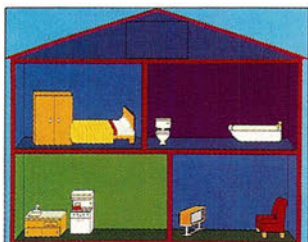
Acorn

If you call your company Brilliant Computing, you set high expectations for your products. Judging by the batch of programs which arrived in the *Acorn User* office recently, I'm not entirely sure Brilliant's special needs software lives up to the dictionary definition. However, its output is certainly solid and sound.

Starting with *Touch Fun Fair*, this program was originally produced for the BBC range of computers; it has to be said that this shows.

The Switch On concept was also developed for the Beeb and, although *Switch On Zoo* is a new, Arc-only title, it still has a very old-fashioned feel.

Both discs contain a collection of games. In *Touch Fun Fair* they are based on popular fairground rides such as the Ghost Train, Hoopla and the Ferris Wheel. *Switch On Zoo*,



At home Microworlds style

on the other hand, features creatures such as an elephant, a frog and penguins, in picture-building and matching activities.

Sound effects are included (these are slow to load, for which Brilliant rather sweetly apologises on screen) but both these packages have the real advantage that they can be operated via switches, a touch screen or a Concept Keyboard.

The graphics

Meeting a need

With a name like Brilliant, you give your software a lot to live up to. Alice Smith takes a run through some of the best, and some of the rest special needs computing

are extremely basic but in the hands of special needs teachers, these programs could be very stimulating and they do have the merit of being inexpensive.

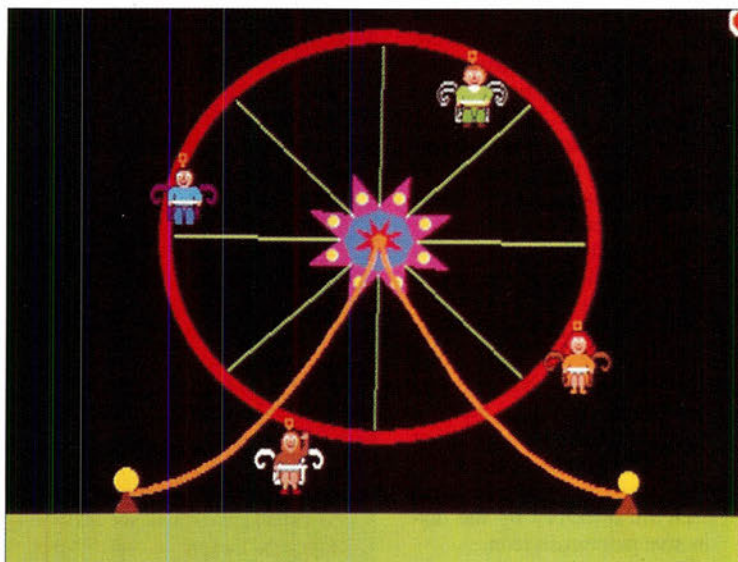
Sound stuff

Although it comes on two discs rather than one, *Sound Stuff* is in a similar vein. It consists of a library of 24 animated pictures and the noises associated with them. These are things like a fire engine, a vacuum cleaner and a dog, and five different activities are built around them. One, for example, is a *Pelmanism*-type game and for finding a matching pair the user gets a simple reward. Again, this program can be operated via a touch screen.

Brilliant packages have no fancy frills. All the documentation is basic but easy enough to follow, even for those who are unfamiliar with computers, but *Sound Stuff* is supplied with a set of headphones which should be used if the program is run in stereo.

Microworlds

Microworlds is another picture-building program with



All the fun of the fair. Well, you do have to use a bit of imagination

recorded speech, this time based around the environments of home and garden. In a sense, none of these programs is particularly striking in itself, their value lies in the way teachers can use them as starting points for learning.

In common with the other packages looked at here, *Microworlds* runs perpetually, so the computer can be used as a 'free play' resource for users to go to whenever they want.

Smart Alex

Of all the programs featured here, I like *Smart Alex* best, probably because it has a character - Alex or Alix depending on your gender preference.

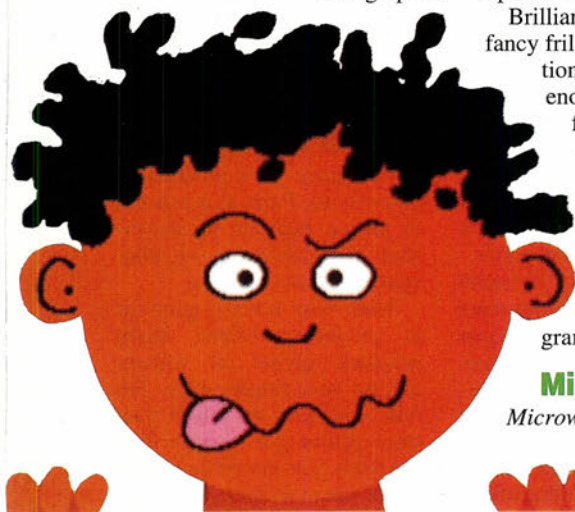
It has proved very popular in field special needs education.

Alex/Alix pulls faces, laughs, winks, waves and barks.

This program has a great deal of 'content', would interest a fairly wide age and ability range and, if you are sampling Brilliant Computing's wares for the first time, is the one you should buy.

Product details

Products: Switch On Zoo/Touch Fun Fair/Sound Stuff/
Microworlds: Home and Garden/Smart Alex
Price: £20/£20/£25/£25/£25 (discounts available for cash order)
Supplier: Brilliant Computing, Box 142, Bradford BD9 5NF.
Tel: (0274) 497617



change eyes

change mouth

John Rennie sets sail on the uncharted waters of Paint and shows himself to be the buoy for the job

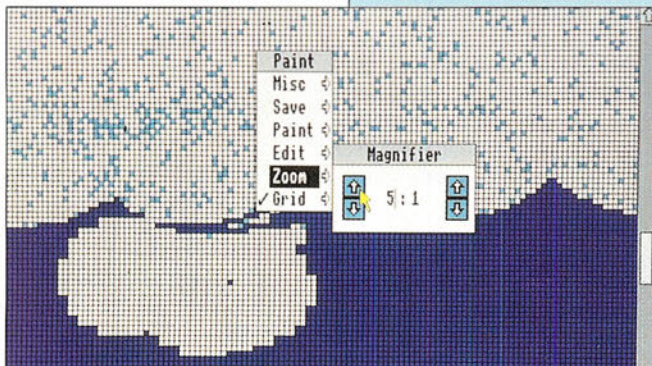
LEARNING CURVE

Last month I made a start on tickling your artistic tastebuds with a smorgasbord of tasty images compiled in Draw. Leaving aside the comments of philistines who felt my attempts at drawing were more of a dog's dinner than a banquet, we start on the next course.

Now you have had time to digest these basic lessons in draughtsmanship, and know the sharp end of the pencil from the rubber, we take a look at the application concerned with all things spritely: *Paint*.

You can use this pixel-based picture editor to, yes, paint coloured images by applying colours to an area with a variety of brushes and other tools. The resultant picture is called a sprite, represented in your file directory by the distinctive paintbrush icon.

The important distinction between *Draw* and *Paint* is that the former is object-based, so you can pick up and move the assorted lines, polygons and Bezier curves that make up your image. *Paint*, being colour-based, only recognises the colour of each pixel. You



Pixels are the basic elements of your screen. Here the screen is blown up to 5:1 magnification. Each square in the grid is a pixel. Big it looks blocky, but reduced down these chunky gradations blend into smooth curves

Step 1

Create a sprite. Click in your Apps file, double-click on your *Paint* icon and it appears on your iconbar. Click once on this to open a *Paint* file. The Palette icon-bar menu allows you to set the screenmode, and hence the colours available to you. You can go for the full 256-colours, but for this tutorial I have selected Mode 27: 16 colours are plenty for our purposes. Click on the *Paint* icon; this raises the Create new sprite window with a Sprite file window behind. Name your sprite by replacing newsprite with Poster and set the desired size. We are creating a poster, so go for a portrait layout rather than the landscape shape in the default. Click OK and here is your sprite.

Clicking within the Edit submenu of the main menu allows you to bring up the Paint Tools. Combining these two allows you to create your picture. Click on the Airbrush tool – top second left in your box, and click on light blue in the Colour palette. Now fill the whole ground with the spray, you can set Density and Radius of spray to taste. You can also grade the density from top lightest to bottom darkest by respraying as you move down.

will notice this obscures the blue of the sky beneath. Sea? Zoom up for the this one. 7 to 1 should do it. Now you see the pixels.

Select the Pencil tool and Dark Blue and sketch in the irregular wave shapes as a continuous line from page left to page right. Now we have to fill in the block. This is fun and yields the same aesthetic pleasure as graffiti-ing, without the hassle and risk of sneaking into London Underground engine sheds at dead of night. Select Paintbrush: yes, it's the one that looks like a paintbrush, and smooth in the colour. For the bits you can't reach, simply reduce the size of the brushstrokes using the x and y settings. The very fine stuff you can colour pixel-by-pixel.

can't move pixels about the screen, therefore you can't pick up, delete or resize a shape constructed from pixels.

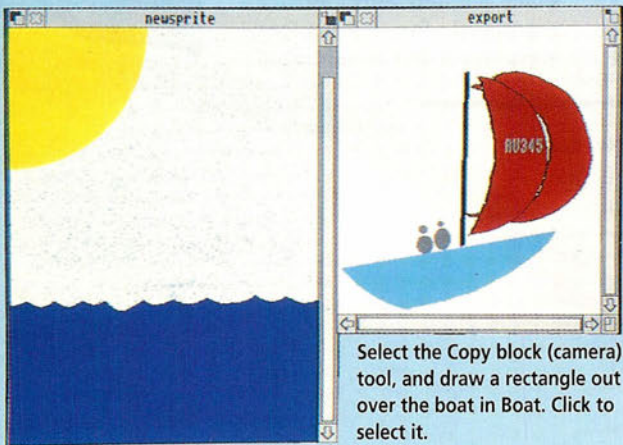
Paint is very versatile though. Sprites and sprite files use a standard format, so you can export the images you use to other programs, like *Draw*; you can import other sprites into your sprite files; you can merge sprites together and – and this is how the illustrations

on this page were produced – you can use *Paint* as a camera, to take a snapshot or screenshot of whatever is on your screen. A tasty package.

What *Paint* is really good for is producing bright, sharp graphics, poster art without getting your fingers dirty. We will start with an image that, once you've got to grips with the tools, you should be able to knock out in an hour or less.

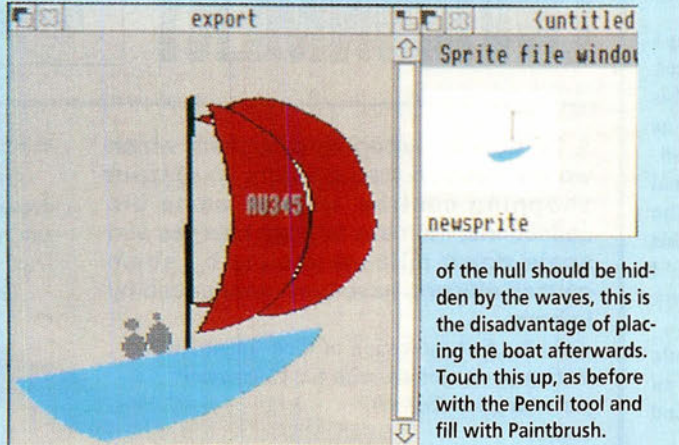
Step 2

Now you have your smoothly-lapping waves you want something to sail on them. Create another sprite, called Boat: size is immaterial as you are going to cut and paste from Sprite 2 into Sprite 1. The essence of poster art is combining simple polygons and colours to produce a recognisable image. So, your boat comprises a filled circle segment for the hull; a filled rectangle for the mast; circle outline sections and Set/clear pixels (pencil tool) for the sails and filled ellipses and filled circles for your crew. Manipulating these tools is fiddly at first, hence the reason for boat-building in a separate sprite, but if you make a mistake, click over the selected tool icon and the work will be undone.



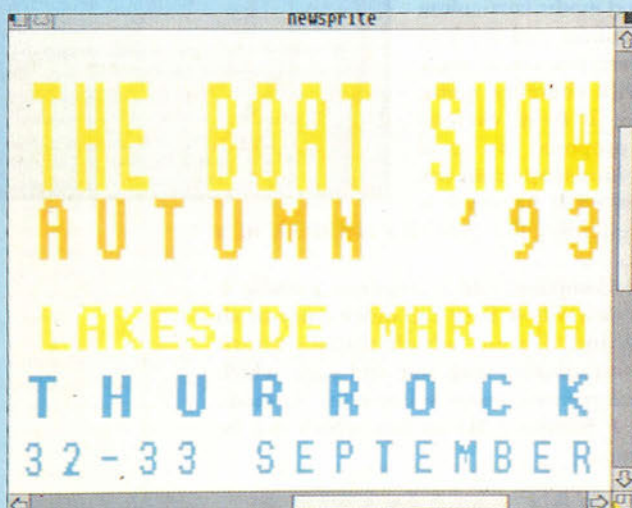
Step 3

Now to cut the boat out. Moving over the main menu select Mask. Then scroll full down on the colour palette and select the lined grey option. Click back in the white background of the Boat sprite – the bit you haven't copied – and this will be masked out in grey. Then select Paintbrush as sprite. Change 'Circle' to 'Boat'. Set to Global. You then move your paintbrush over to the Poster sprite. You will see the boat image moving around the screen, transparent, as you move your cursor. Position it as desired and click. The boat is placed. Now obviously the base

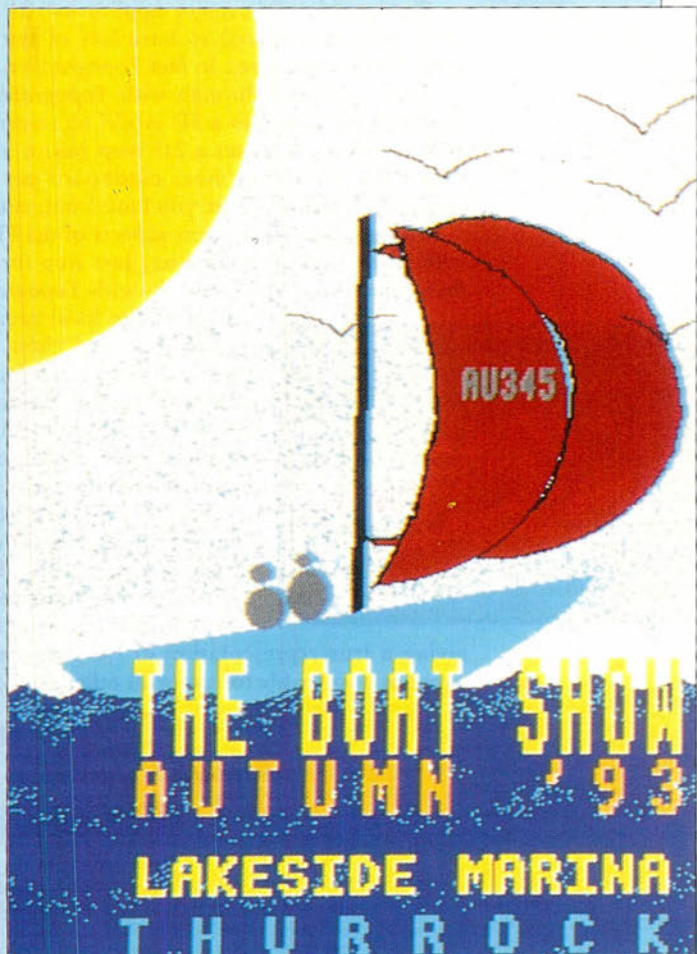


Step 4

The poster is almost there, now for the finishing touches. Text is created using the 'T' tool. Type into the Text window the words you require, adjust their vertical and horizontal size with the x and y co-ordinates and set the spacing between letters. Move your cursor to the sail, click, and the text appears.



The main text, with its varying sizes and spacings, needs to be created in a separate sprite file, then cut and applied using the sprite as paintbrush tool as we did with the boat cutout. Using a variety of colours and running from sky into sea is very striking, but ensure you are not putting dark blue on blue, for instance, as your carefully-wrought words will disappear. For the final touches, blow up the sprite to 5:1 and create the wave peaks using a white airbrush. Your friendly seagulls are created with a swift tick of the Pencil tool, set to black.



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SCHOOL CHILDREN PROVE THAT NEW BYPASS WILL DAMAGE THE LOCAL ENVIRONMENT

EXCLUSIVE

BY
MATTHEW
DAVIES

USING an innovative new program on their classroom computer children from St. Chad's School have shown town planners that a proposed new bypass would have a detrimental effect on their local environment.

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distract children in the classroom as they would be able to see traffic moving along the new road.

The children even went as far as to propose a new route for the road to the town planners. The proposed route would have a negligible impact on the area but still provide the much needed relief to existing roads.



A SERIES of sweeping proposals which would abolish free parking in district shopping centres, change some bin collections, increase lettings charges and scale down mileage claims by some council officers, have been announced by Labour.

In the first indication of their intentions since seizing power jointly with the Conservatives, the party has produced a list of 1,000 proposals to be served on the public.

● REDUCING maintenance

Other economic measures include cutting departmental budgets, cutting school fees, and cutting council services.

The

Topographer is a major application for the Geography curriculum which allows children (and teachers) to have lots of fun whilst learning all about maps, contour lines, valleys, rivers etc. In fact *Topographer* covers virtually all items found on a map.

The real break through with *Topographer* is its 3D section which allows you to convert a 2D map into a 3D model on screen. Imagine turning a set of flat contour lines on a 2D map into a 3D model which clearly shows the hill — no more cardboard cut out models or papier mache! You define where you look from, and what you look at.

Topographer also covers aspects of the IT and maths curriculum with its modelling capabilities. Just stop for a minute and think of the projects that you could do with *Topographer*. You could make

a map of the local area with churches, pubs, woods etc. and then view it from various places. If there is a bypass proposed you could add it in to the existing landscape and see where it is visible from and what impact it is likely to have on the community. I'm sure you can think of a hundred and one topics.

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As CIS' graphics package makes its debut on the Arc, Jack Kreindler finds it quick, powerful, but unhappily-married to Mode 13

Survival of the *quickest*

QPaint or *QuickPaint* to give it its full name, was originally designed as a sprite generator for the games writers at CIS. But though traits of the programmers' original intentions remain, the package has developed into far more than just an Amiga *Deluxe Paint* replacement.

In use

The directory window of our pre-release version contained a configuring program. A complete toolset appears next to the last one saved and the user can choose the tools that appear in *QPaint* itself. So, although the program takes up a hefty 736K of Ram, the loaded version is just 143K.

One noticeable aspect of *QPaint*'s front end is that it is not multi-tasking. Once a sprite is loaded, it will

immediately exit the desktop to Mode 13. Only 256-colour sprites can be imported, so editing icons first requires translation in *ChangeFSI* or suchlike. Non-Mode 13 sprites can be stretched or squashed to size, but locking the aspect ratio is not yet possible.

A striking feature of the program is the number of special effects tools available. These include Shear, Rotate, Perspective and Mould for shaping, and a good array of colour and image manipulation such as Smooth, Lighten, Tint, Blur and Sharpen.

A colour table screen offers *Revelation Image Pro*-like tone and colour-shifting facilities. Of the raw creative tools the graduated fills were most impressive. At the base of the *QPaint* screen is an area dedicated to the colours involved in

graduated fills. Select any colours from the 256-colour set and an option blends the in-between colours, using dithering. This enables graduated fills to travel through more than one colour range in a single fill, something *ArtWorks* users would find very useful.

Another feature for image creation can be found in the Perspective Options menu, from which grids put into perspective, pixels and chequered surfaces can be formed. The number of image enhancement tools, under the control of the three-level magnification window, help to refine and add the finishing touches.

As far as speed goes, *QuickPaint* lives up to its name, but being a single-tasking application, this is to be expected. Striking imagery, especially once the effects have been

mastered, can be whipped up in no time. But the serious drawback with *QPaint* is its marriage to Mode 13.

Conclusion

The price is to be £49.95 with *Photopia Junior* thrown in: a good price for this application. And CIS promises, if not a multi-mode version, at least Mode 28 compatibility at some time in the future. Other features promised are an animation suite and memory-dependent undo buffer.

But for the first release, *QPaint* is in a narrow market niche. For producing games screens, *QuickPaint* is going to beat everything, but for fine artwork at high resolutions the plethora of tools and effects cannot fulfil their potential, for the moment at least.

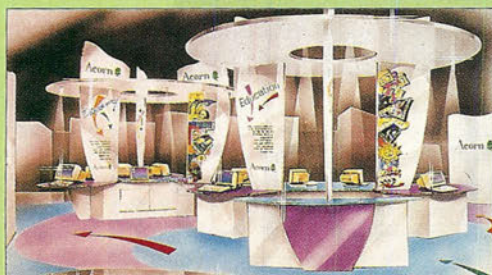
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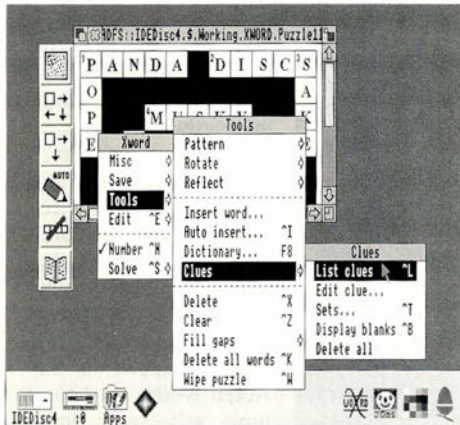
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| | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|--|
| 10/10 118 | Contex Computing 90 | Icon Technology..... 58 | Quantum Software.....58 |
| 4th Dimension 70 | CSS.....88 | ICS (Ian Copestake Ltd)4-6, 8 | Rheingold Enterprises.....94 |
| Acorn World Show 53 | Cumana..... 19 | IFEL..... 100 | Risc Developments..... 20,26,64 |
| AJS 62 | Dabhand Computing..... 96-97 | Intelligent Interfaces88 | Senlac Computing94 |
| Aleph One..... 50 | Dalriada Data Technology... 125-126 | Kudlian Software.....58 | Serious Statistical Software . 125-126 |
| Alsystems 50 | Datafile 106 | Longman Logotron 11 | Sherston Software OBC |
| Arcaynia P.D..... 125-126 | Datastream..... 125-126 | Look Systems IFC-1 | Simtec.....62 |
| Arch Angel 125-126 | Dec Data.....88 | Matt Black72 | Skyfall 125-126 |
| Armtech..... 94 | Desktop Projects Ltd92,93 | Micro Discount.....90 | Snap Computer Supplies....102 |
| Atomwide Ltd 34 | Digital Services..... 49 | Micro-Vitec.....74 | Soft Sector72 |
| Automatic Services 72 | Dixon & Dixon..... 125-126 | Morley Electronics.....61 | SSERC Soft'93 125-126 |
| Beebug Ltd 13-15 | Doggy Soft 125-126 | Neales 127 | Superior Software.....76 |
| Bowland Developments 25 | Electronic Font Foundry..... 112 | Norwich Computer Services 110 | Technology Matrix62 |
| Brilliant Computing..... 125-126 | Explan88 | Oak Solutions68,80 | Ted Kirk 125-126 |
| Clares Micro Services.... 33,122 | Focus I.T..... 84-85 | Oregan.....72 | The Data Store.....62 |
| C.U. Electronics..... 98 | Gamesware67 | Pineapple Software 102 | The Really Small Software Co..... 125-126 |
| Circle Software 125-126 | Gnome Computers..... 106 | PRES.....54 | The Serial Port.....20 |
| CJ Computers 125-126 | Graham Bell 125-126 | QD Enterprises90 | Vantage 1 Direct.....78-79 |
| Clove Computers..... 58 | Greenware Ltd..... 106 | | Wild Vision.....83 |
| Colton Software Ltd..... IBC | Ground Control50 | | Watford Electronics38-45 |
| Computer Concepts..... 46,52,87,104 | | | |

THE MOXON INTERVIEW

GORDON TAYLOR

This scenario is not normal. I'm sitting in a snooker room, complete with full-size snooker table, mounted moose head on the wall (at least, I think it's a moose head) and racks of cues. And the telephone has just started to talk. I kid you not.

The telephone is calmly asking Gordon Taylor, marketing manager for Computer Concepts, to pick up the receiver. This is Gaddesden Place, home of the talking telephone system and the company that brought you *Impression* and *Artworks*.

Upstairs there's a band recording a video for their new single, and when I venture to the first floor in search of the owner of the black BMW which is so thoughtfully parked right in front of my car, the fake smoke and wacky costumes don't quite gel with my image of Computer Concepts as a quality software and hardware company. Getting back down to earth, CC is gearing up to the Acorn World show with plenty of new releases, a professional version of *Impression*, two CD-Rom versions of *Artworks*, more printers, a multimedia expansion card and a thesaurus: busy time, then, is it?

'We won't be branching out into new product areas,' explains Gordon. 'but there'll be more consolidation in areas we already cover.' So I suppose that means there won't be any hard-hitting games from the Hemel Hempstead stables this Christmas.

'Er, no, I don't think so: it wouldn't really fit in with our image,' says Gordon. 'On the other hand, I welcome the change to a games-oriented Acorn market: I think Acorn's current business stance is just right. There's a lot of money in

the games end of the market, and they're after it.'

Do I detect a small streak of optimism there? It seems to me that whenever I go to Acorn shows (and, by the way, Gordon always makes an appearance at Acorn shows: bit of a famous show personality is our Gordon) there are always plenty of people moaning about Acorn's business plans. What a relief, then, to hear phrases like: 'The Acorn platform is the only credible non-American platform,' and

'I believe that without Acorn there wouldn't be an independent hardware or software market in the UK.'

Gordon's assessment of the competition goes something like this... 'I happen to think that Atari and Commodore haven't managed the change from 16-bit to 32-bit at all well: the vast majority of their customers still use 16-bit technology and do not necessarily want to upgrade.' No-one's safe from Gordon's rose-coloured spectacles: not even

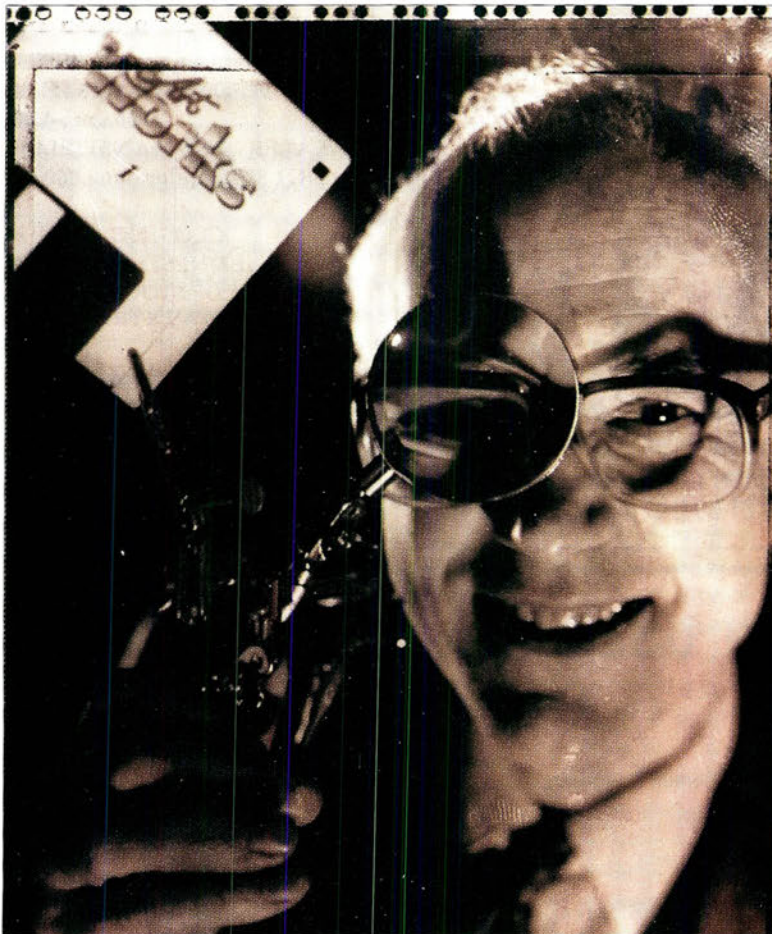
Sonic and Mario. 'In the case of Nintendo and Sega, they sell both the hardware and most of the software,' Gordon points out, 'so they price their machines very low, and push a lot more of the cost onto games prices, which are a lot higher than they need be. This doesn't happen in the Acorn world, as Acorn itself sells very little software compared to the third-party market.' So Acorn games are cheaper, but then again there aren't so many of them, and it takes some time for games to migrate to the 32-bit hardware. Still, one big advantage of the Acorn software scene is that, as Steve Jobs, father of the Apple put it: 'Software is always written for the lowest common denominator,' and with Acorn that standard is 32-bit, and not 16-bit.

Is this why Gordon loves Acorn computers so much? Because the technology involved is state of the art? Or is there more to it?

'All other computer platforms are controlled from America, so the profit goes there,' says Gordon. 'Software is written to cater for American needs, as opposed to the rest of the world, and the American domination of computing is akin to their domination in the film industry.'

'Unless we support a machine from this country (Acorn machines, in other words) then that option will waste away.'

So there we have it: your country needs you. Gordon Taylor is a useful persuader to have on your team. Another feather in CC's cap.



'The Acorn platform is the only credible non-American platform'

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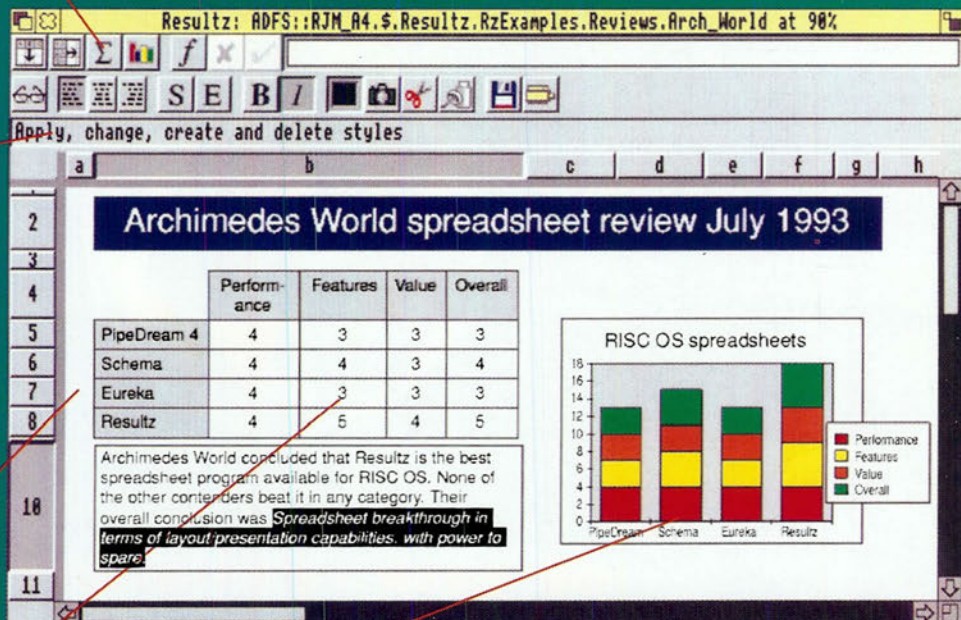
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